A PHASE I ARCHAEOLOGICAL SURVEY AND PHASE II CULTURAL RESOURCES EVALUATION FOR THE OTAY BUSINESS PARK PROJECT

SAN DIEGO COUNTY, CALIFORNIA

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Submitted to:

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USGS Quadrangle:	*Otay Mesa* (7.5 minute)
Study Area:	193.9 acres
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List of Abbreviations

AMSL	above mean sea level
APN(s)	Assessor's Parcel Number(s)
BFSA	Brian F. Smith and Associates
BMF	Bedrock milling feature(s)
Cat no.	catalog number
CEQA	California Environmental Quality Act
CGM	course-grained metavolcanic
FAR	fire-affected rock
FGM	fine-grained metavolcanic
LPW	lithic production waste
MGM	medium-grained metavolcanic
NAHC	Native American Heritage Commission
OHP	(State) Office for Historic Preservation
SCIC	South Coastal Information Center
SDSU	San Diego State University
SHPO	State Historic Preservation Office
SS	Surface Scrape
STP	Shovel test pit
TU	Test unit
USGS	United States Geological Survey
YBP	years before present

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1.0 MANAGEMENT SUMMARY/ABSTRACT

The following report describes a cultural resources study conducted by Brian F. Smith and Associates (BFSA) for the Otay Business Park Project, situated southeast of Brown Field, south of Lower Otay Reservoir, and along a portion of the International Border with Mexico, in San Diego County, California. The project, as proposed by the applicant will consist of subdividing the project area into 59 industrial lots on 116.43 acres, two detention basin lots on 6.61 acres, a 0.19-acre lot set aside for a sewer pump station, and approximately 13.02 acres provided as open space to accommodate a realigned drainage channel through the site. Off-site impacts include 18.23 acres, and are associated with the construction of Airway Road, Siempre Viva Road, and Alta Road to the west and north. The archaeological study, conducted from July 31, 2006 through February 20, 2007, included a survey of the entire project, records searches to identify recorded sites, and a testing and significance evaluation program for 13 of the 23 resources located within the project boundaries and the off-site improvements areas.

Archaeological records searches were conducted at the South Coastal Information Center (SCIC) and the San Diego Museum of Man. The searches indicated that ten archaeological sites, consisting of eight lithic scatters, one habitation site, and one historic site including a cistern feature and trash scatter, have been recorded within the boundaries of the project area (SDI-8074, SDI-8075, SDI-8076, SDI-8077, SDI-8078, SDI-8079, SDI-8080, SDI-8082, SDI-11,798, and SDI-11,799/H). One site, a prehistoric lithic scatter/habitation site, was located within a portion of the off-site improvements area (SDI-8081). In addition, one historic site was located very near the boundary of a portion of the off-site improvements area (SDI-12,888H). The records further indicate that four cultural resource studies and one draft Environmental Impact Report (EIR) have been conducted within portions of the project area. The project area has been previously surveyed in its' entirety for a proposed border crossing (Carrico 1974) and a sludge management facility (Robbins-Wade and Gross 1990). An additional survey covered a very small portion of the project area (Kyle 2001). A portion of the project area was also covered in an EIR for a proposed racetrack (TMI Environmental Services 1990). Two of the sites within the project area, previously listed as one site (SDI-8076/8079), were investigated for a National Register Significance Evaluation associated with a U. S. Army Corps of Engineers Border Patrol lights project (McDonald et al. 1998).

In addition to the archaeological record searches, BFSA requested a review of the Sacred Lands File from the Native American Heritage Commission (NAHC) in Sacramento, California. The NAHC indicated that no known cultural resources are present within the project area. In accordance with San Diego County guidelines, additional Native American consultation was conducted during the project with a representative of the Kumeyaay Nation.

The archaeological survey of the proposed project area and off-site improvements areas resulted in the relocation of eight of the 11 previously recorded sites, and the discovery of six isolated artifacts and six newly recorded sites. The eight relocated sites include SDI-8075, SDI-8077, SDI-8078, SDI-8080, SDI-8081, SDI-8082, SDI-8079, and SDI-11,799/H. Previously recorded sites not relocated during the current study include SDI-8074, SDI-8076, and SDI-11,798. The 12 previously unrecorded resources identified during the current study include six isolates (P-37-027656 through 027661) and six sites (SDI-17,962, SDI-17,963, SDI-17,964, SDI-17,965, SDI-17,966/H, and SDI-17,967).

The archaeological survey of the proposed off-site improvements resulted in the relocation of one previously recorded site within the impact area (SDI-8081). No new, unrecorded resources were discovered within the off-site improvements area. In addition, one previously recorded site (SDI-12,888H) was located adjacent to an off-site road improvements corridor. No evidence of this site was discovered either in its mapped location or in the peripheral area between the recorded site boundaries and the road improvements corridor.

For the proposed development to proceed, a testing program was implemented to determine whether any of the previously recorded or newly identified resources are significant according to San Diego County and CEQA criteria. Thirteen of the resources were subjected to a testing and significance evaluation program as part of the current study (SDI-17,962, SDI-17,963, SDI-17,964, SDI-17,965, SDI-17,966/H, SDI-17,967, SDI-8081, SDI-8074, SDI-8075, SDI-8077, SDI-8078, SDI-11,798, and SDI-11,799/H). Four previously recorded sites (SDI-8076, SDI-8079, SDI-8080, and SDI-8082) were formerly subjected to evaluation and determined to be not significant, and were therefore not addressed in the current study. No surface evidence of Sites SDI-8074, or SDI-11,798 was observed during the field survey. Because neither of these sites has been previously subjected to a testing program, they were added to the current testing program to verify their location and determine significance. Sites SDI-17,963, SDI-11,799/H (historic component) and the portion of SDI-8081 located within the proposed off-site improvements were found to be significant resources requiring a data recovery program to mitigate significant impacts to the sites during development. Sites SDI-8075, SDI-8077, SDI-8078, SDI-11,798, SDI-11,799/H (prehistoric component), SDI-17,962, SDI-17,964, SDI-17,965, SDI-17,966/H and SDI-17,967 are considered significant sites because they yielded information during the current program. However, they have no additional research potential and, therefore, impacts to these sites have been mitigated to a level below significant through the recording of information and curation of collected artifacts. Site SDI-8074 was determined to be not significant, as no surface or subsurface artifacts were found in association with the site. In addition, subsurface testing in the periphery of SDI-12,888H adjacent to the off-site improvements showed that no elements of this site exist within the impact area. Isolates (P-37-027656 through -027661) contain no other research potential other than the recording of the location and attributes; therefore, they were not subjected to testing.

Development of the parcel has the potential to directly or indirectly impact all of the cultural resources present within the project boundaries. Therefore, an archaeological testing and evaluation program was conducted as part of the project development review. The testing program determined that two of the resources in their entirety (Sites SDI-17,963 and SDI-11,799/H) and a portion of a third site (SDI-8081) located within the project or off-site improvements boundaries are significant based on the California Environmental Quality Act (CEQA), Section 15064.5 criteria and the County of San Diego guidelines. Impacts to these sites will require further mitigation in the form of a data recovery program. These sites are not, however, evaluated as RPO significant due to the reduced research potential created by agricultural impacts. Mitigation measures will be required as part of project implementation to reduce potential impacts to a level below significance.

The current project was adequate in evaluating the status of cultural resources located within the project area and their potential constraints on project development. The appropriate Department of Natural Resources (DNR) site update forms were submitted to the South Coastal Information Center (SCIC) at San Diego State University (SDSU). A copy of this report will be permanently filed with the SCIC at SDSU. All notes, photographs, and other materials related to this project will be curated at the archaeological laboratory of BFSA in Poway, California. Per county requirements, all artifacts collected will be curated at a San Diego County facility that meets federal standards per 36 CFR Part 79 such as the San Diego Archaeological Center (SDAC) upon completion of the project.

2.0 INTRODUCTION

Brian F. Smith and Associates (BFSA) conducted an archaeological Phase I survey and records search and a Phase II testing and significance program for the Otay Business Park Project located in the East Otay Mesa Specific Plan area in San Diego County, California. The applicant for this project is Paragon Management Company, LLC. As part of the preparation of environmental review documents required by San Diego County, a cultural resources assessment was prepared to document the extent of cultural sites within the project and evaluate the potential impacts to cultural sites associated with the planned development. The scope of work for this project included records searches, a field survey, and a testing and evaluation program for ten prehistoric and multi-component sites. The Otay Business Park Archaeological study was conducted according to regulations set forth by CEQA, Section 15064.5, San Diego County Resource Protection Ordinance (RPO), and San Diego County's *Draft CEQA Process Guidance for Cultural Resources, Land Use and Environment Group* (revised July 27, 2006). In addition to the cultural resource guidelines listed above, the Phase II testing program was designed to determine significance according to *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006).

The project site (Assessor's Parcel Number 648-070-21) is located north of the international border approximately 0.5 miles east of Enrico Fernii Drive in East Otay Mesa, within an unincorporated section of San Diego County (Figure 2.0–1). Specifically, the project is located on the USGS *Otay Mesa*, California 7.5-minute topographic quadrangle in the southern 1/2 of Section 31, Township 18 South, Range 1 East (Figure 2.0–2). The total project area consists of a 161.6 acres; 18.23 acres of off-site improvements will occur to the west and north. The applicant proposes to subdivide the project into 59 industrial lots and will include a road network and off-site road and utility improvements (Figure 2.0–3). The entire property will be impacted by development. Currently, the project is characterized as disturbed grassland with various dirt roads and trails used by United States Border Patrol and off-road enthusiasts, pedestrian traffic, and previous agricultural activities.

According to San Diego County cultural resources guidelines, local Native American groups designated by the Native American Heritage Commission (NAHC) must be consulted during the course of the project. A representative of the Kumeyaay Nation, Clinton Linton, participated in the fieldwork program.

The most recent archaeological investigation conducted for the project area included recommendations for the treatment of cultural resources within the entire current property. Affinis Environmental Services (AES) previously conducted a due diligence level survey of the entire project area to determine the potential constraints related to cultural resources on the proposed project (Robbins-Wade 2005). AES concluded that although further archaeological work would be necessary, none of the resources appeared to represent significant issues and any constraints on the proposed project could be mitigated through a Phase II testing program and Phase III data recovery, where applicable (for further discussion see Section 5.1).

All aspects of the project were directed by consulting archaeologist and principal investigator Brian F. Smith. Project archaeologist Seth A. Rosenberg prepared the text of this report and conducted the field survey and testing program, with assistance from field archaeologists Damien Tietjen, Ryan Robinson, Brad Comeau, Charles Callahan, Andrew Hoge, Matthew Smith, Ryan Carpenter, Nikki Blotner, Janelle Smith, Shaun Murphy, Justin Houghton, and Native American representative Clinton Linton. Artifact analysis was conducted by Kent Smolik and Sara Moreno. Graphics were provided by Damien Tietjen and Clint Callahan. Report editing and production was carried out by Dylan Amerine and Brian Smith, with assistance from Amanda Erb and Jenni Kraft.

Figure 2.0–1
General Location Map
The Otay Business Park Project
County of San Diego

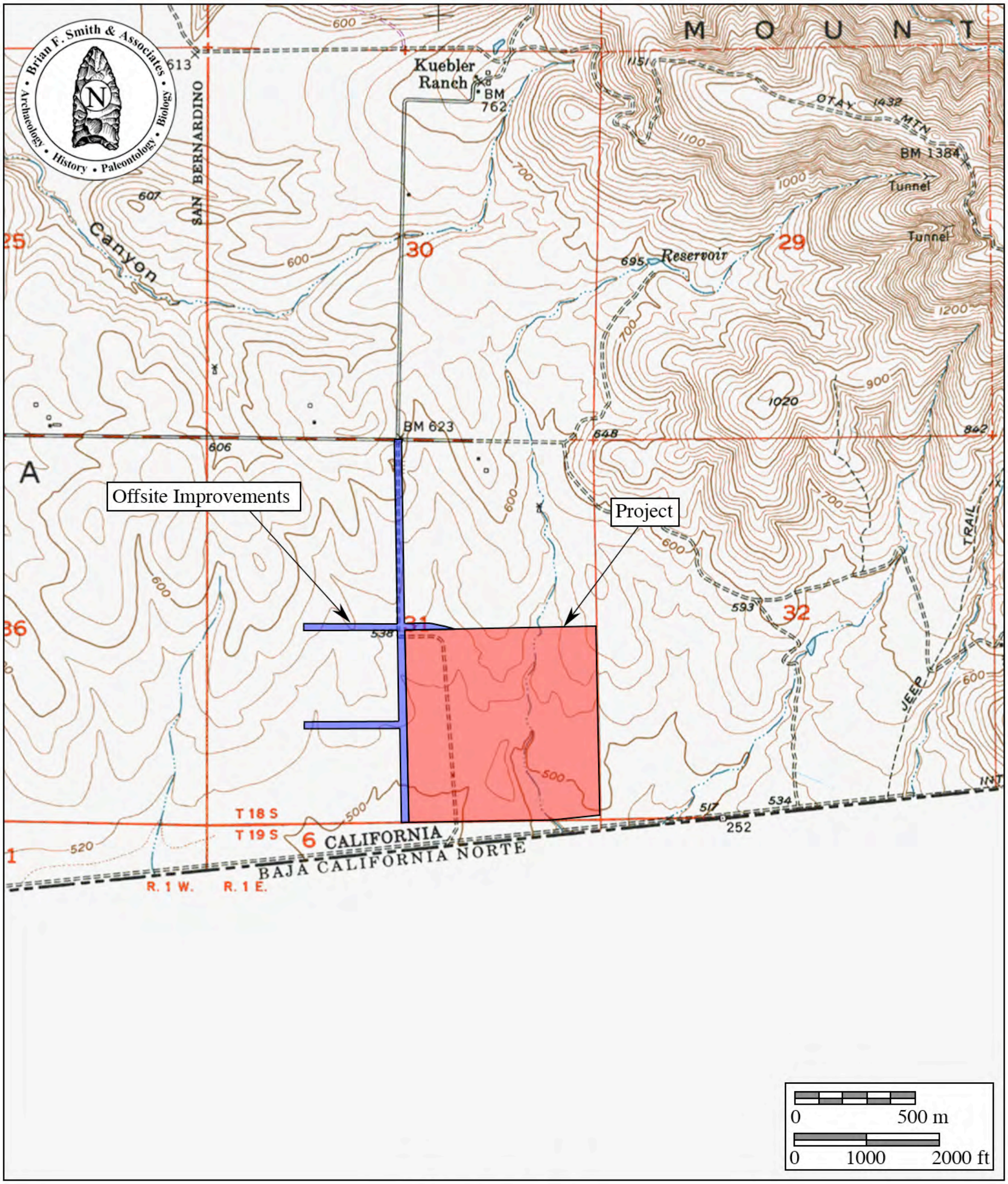


Figure 2.0–2

Project Location Map

The Otay Business Park Project

USGS *Otay Mesa* Quadrangle (7.5 minute series)

Figure 2.0–3

Project Development Map

The Otay Business Park Project

3.0 SETTING

The project setting includes both physical and biological contexts of the proposed project, as well as the cultural setting of prehistoric and historic human activities in the general area.

3.1 Natural Setting

The Otay Business Park Project is located on a series of low-lying hills southeast of Otay Valley in the southwestern foothills of the San Ysidro Mountains in San Diego County (Plates 3.0–1 and 3.0–2). The topography within the project area is dominated by rolling hills, crossed by several seasonal drainages. Elevations within the project area range from approximately 480 feet AMSL (above mean sea level) within a drainage located at the international border in the southeast portion of the project, to approximately 560 feet AMSL along the central northern border of the project.

The project area is located in a transitional region between the generally level Otay Mesa and the rolling hills and gentle slopes at the base of the San Ysidro Mountains to the north and east. This geologic area consists of a series of knolls and mesas that are interrupted by small canyons and drainages located in the Coastal Plains Physiographic Province. Much of this area is composed of Pleistocene and Upper Pliocene marine deposits, currently known as the Lindavista, Sweitzer, and San Diego Formations (Biehler 1979). The San Diego Formation is composed of gray friable sandstone and conglomerate. The Lindavista and Sweitzer Formations mantle the majority of the mesa tops. These formations consist of near-shore marine and non-marine sediments deposited on a wave-cut terrace, following the deposition of the San Diego Formation. The Lindavista Formation is composed of moderate, reddish-brown, interbedded sandstone and conglomerate, and the Sweitzer Formation is composed of brown, reddish-brown, and red, poorly sorted sandstone and conglomerate. The Otay River Valley, the major canyon bisecting Otay Mesa from east to west, is composed of Quaternary, non-marine terrace deposits and recent alluvium derived from rocks in the area. The juncture of the coastal plain and foothill provinces to the east is comprised of Plio-Pleistocene, non-marine deposits typically consisting of angular metavolcanic detritus. The hills to the north and east of the project area are comprised of Jurassic volcanics, a collection of mildly metamorphosed volcanic and volcanoclastic rock formations, characterized by the Black Mountain or Santiago Peak Volcanics (Biehler 1979). Santiago Peak Volcanics are represented throughout this area of San Diego County by outcrops of basalt and fine-grained, green metavolcanics known locally as felsite.

The project area also includes a variety of soils. The lower elevations consist of alluvial clays and sands indicative of a flood plain. The soil in the upper elevations consists of clay mixed with pockets of bentonite and/or cobbles, comprised mostly of granite, basalt, and quartzite. These lithic materials, generally hard and extremely resistant to erosion, were preferred by the prehistoric inhabitants of the San Diego region for the manufacture of flaked tools and grinding implements (Smith 1991; Robbins-Wade 1990).

Plate 3.0–1 Project overview, facing east.

Plate 3.0–2 Project overview, facing south.

The biological setting of the project area is dominated by an agricultural vegetative community consisting primarily of introduced grasses, with scant areas of native coastal sage scrub adjacent to drainages. These communities are dependent on the amount of precipitation that the area receives. The amount of seasonal precipitation is related to the major landforms that exist throughout the county. Coastal mesas, such as Otay Mesa, receive an average of between 12 and 16 inches (30 to 40 centimeters) of rainfall annually, mostly between October and May (Beauchamp 1986). The project area also exhibits generally mild temperatures; however, several instances of winter frost, as well as some weeks in the summer with temperatures reaching 100° Fahrenheit, are recorded annually. These environments tend to support a wide variety of wildlife, particularly birds and small mammals (Beauchamp 1986).

The entire project area has been used for farming and grazing during the past, although currently the property is vacant. The previous plowing and cattle grazing ushered in introduced grasses and weeds that contributed to the generally poor surface visibility encountered during the investigation of the project area.

3.2 Cultural Setting

Archaeological investigations in San Diego County have documented a diverse and rich record of human occupation spanning the past 10,000 years. Likewise, the history of archaeological research in San Diego County and southern California since the 1920s is as diverse and rich as the number of archaeological investigations conducted by scholars with different research designs and mental constructs. These investigations have provided an overwhelming body of knowledge concerning the prehistory of San Diego County and southern California. Researchers have continuously built on this body of knowledge and have offered more than a dozen cultural sequences based on characteristics observed in the archaeological record. Typically, scholars have separated prehistory into three general sequences and have used the terms complex, period, stage, tradition, and horizon to define each sequence. The terms used to describe these sequences generally fall into three categories: those used to describe a culture with a specific toolkit (e.g., San Dieguito, La Jolla), geographical (e.g., La Jolla, Pauma), and/or temporal (e.g., Archaic, Late Prehistoric). These terms are often used interchangeably to describe a particular artifact assemblage or site.

The first generally accepted culture chronology for San Diego County was developed by Malcolm Rogers (1939 and 1945). Rogers (1939 and 1945) divided San Diego prehistory into three complexes or cultures, which he called (in temporal order from earliest to latest) the San Dieguito, La Jolla, and Yuman. Subsequent researchers have modified Rogers' (1939 and 1945) original sequence by further subdividing the cultures (e.g., La Jolla I, La Jolla II, and La Jolla III; Moriarty et al. 1959), renaming the cultures based on geographical distinctions (e.g., La Jolla vs. Pauma; Meighan 1954; True 1966), and/or by collapsing the cultures into cultural temporal periods (e.g., Early Period (Archaic), Late Period; Gallegos 2002). Most of the early (i.e., pre 1960) cultural sequences were developed prior to the development and use of radiocarbon dating and were based on similar comparisons with artifact assemblages in other geographical regions with relative and/or absolute dates. While a number of different cultural sequences have been put forth in the past 60 years, including many based on radiocarbon sequences, there still does not appear to be a consensus in the culture chronology for San Diego County.

Today, most researchers collapse San Diego prehistory into three general periods: PaleoIndian, Archaic, and Late Prehistoric (Masters and Gallegos 1997; Reddy 2000) and use the terms San Dieguito, La Jolla, Pauma, Encinitas Tradition, Millingstone Horizon, Yuman, Shoshonean, Diegueño, Cuyamaca Complex, and San Luis Rey Complex interchangeably in describing these periods. For example, PaleoIndian is frequently used interchangeably with San Dieguito, and Archaic is alternated with La Jolla or Pauma. The situation is further confused by the realization that as more and more information is gathered about San Diego prehistory, the more the characteristics distinguishing San Dieguito, Pauma, La Jolla, and Yuman become blurred. In fact, archaeological sites in San Diego County often contain evidence of use throughout prehistory, and repeatedly this information is located in poorly stratified and mixed subsurface deposits. These types of difficulties preclude making distinctions between specific complexes that are based on toolkit or geographical differences. Unlike other areas of California or the southwest, the discovery of archaeological sites with strong stratification sequences undisturbed by bioturbation is extremely rare in San Diego.

The following discussion about the prehistory of San Diego County uses the terms PaleoIndian, Archaic, and Late Prehistoric/Kumeyaay to guide the review of San Diego prehistory with specific reference to the San Dieguito, La Jolla, and Pauma Complexes. The discussion will focus on the historical use of these terms; particularly, how scholars have used these terms to differentiate particular periods of prehistory. Absolute chronological information, where possible, will be incorporated into this discussion to examine the effectiveness of continuing to interchangeably use these terms. The Archaic Period represents 7,700 years of prehistory from the Early Holocene to the beginning of the Late Holocene. The Archaic Period is typically broken down into Early, Middle, and Late in order to examine trends that occurred during this period. The Early Archaic Period represents the time from 9,000 to 6,000 YBP, the Middle Archaic Period signifies the time between 6,000 to 3,000 YBP, and finally, the Late Archaic Period characterizes the period from 3,000 to 1,300 YBP. The Late Prehistoric Period represents the terminus of the Late Holocene between 1,300 YBP to 450 YBP. The end of the Late Prehistoric Period is associated with the arrival of Spanish explorers in 1542 A.D., after which the next cultural stage is usually referred to as the Protohistoric period. Reference will be made to the geological framework that divides the culture chronology of the area into four segments: late Pleistocene (20,000 to 10,000 YBP), the early Holocene (10,000 – 6,650 YBP), the middle Holocene (6,650 to 3,350 YBP), and the late Holocene (3,350 to 200 YBP). The use of the geological framework in describing San Diego prehistory is advantageous over other frameworks as it allows comparisons to be made with other geographic regions, relies on absolute dating methods, and can be used to examine climatic or environmental changes. Additionally, for sites where cultural affiliation or complex cannot be determined, a geological framework is useful. Table 3.0–1 provides a summary of the regional chronologies in relationship to the geological framework.

3.2.1 PaleoIndian Period (11,500 to circa 9,000 YBP)

The PaleoIndian Period is associated with the terminus of the late Pleistocene (12,000 to 10,000 YBP). The environment during the late Pleistocene was cool and moist, which allowed for glaciation in the mountains and the formation of deep, pluvial lakes in the deserts and basinlands (Morrato 1984). At approximately 10,000 YBP, a cool/moist climate was present in San Diego County. This is supported by pine pollen found in deposits at Point Loma and Encinitas and oak pollen identified in deposits from Otay Mesa (Gallegos and Kyle 1988; Kaldenberg 1982; Kyle et al. 1989). However, by the terminus of the late Pleistocene, the climate became warmer, which caused the glaciers to melt, sea levels to rise, greater coastal erosion, large lakes to recede and evaporate, extinction of Pleistocene megafauna, and major vegetation changes (Moratto 1984; Martin 1967, 1973; Fagan 1991). The San Diego shoreline at 10,000 YBP, depending on the particular area of the coast, was near the 30-meter isobath, or two to six kilometers further west than its present location (Masters 1983).

In North America, the PaleoIndian Period begins at approximately 11,500 YBP with what is known as the Clovis Culture. The Clovis culture is distinctly recognized by large, fluted points, although other artifacts including knives, scrapers, choppers, perforators, and casual flake tools, have been found in Clovis and other late Pleistocene sites (Fagan 1991; Moratto 1984). They are typically thought of as big-game hunters due to the association of fluted points with extinct, megafauna, such as mammoths, found at kill sites in the Plains and Rocky Mountains. Additionally, during the late Pleistocene plants do not seem to be important in subsistence due to the lack of ground stone tools and other artifacts typically associated with plant gathering. Clovis sites have not been identified in the project area, although in San Diego County and southern California, isolated Clovis-like fluted points have been found in a variety of settings including passes in the Cuyamaca Mountains and the Tehachapi Mountains, valleys in the Mojave Desert and Owens Valley, and shorelines of Little Lake, Searles Lake, Panamint Lake, and ancient Lake Mojave (Davis 1973; Glennan 1971). The recovery of isolated fluted points would suggest that at the end of the Pleistocene small groups of people sharing Clovis-like traits were present in southern California. The recovery of fluted points in a variety of settings would suggest that PaleoIndians were likely attracted to the abundant marshlands, estuaries, and lakeshores. Rather than being big-game hunters, these people likely subsisted using a more generalized hunting, gathering, and collecting adaptation and utilizing a variety of resources including, birds, mollusks, and both large and small mammals (Erlandson and Colten 1991; Moratto 1984; Moss and Erlandson 1995). The lack of sites with late Pleistocene and/or early Holocene subsurface assemblages in San Diego County greatly hinders understanding the PaleoIndian Period in San Diego (True and Bouey 1990).

Table 3.0–1
Summary of Prehistoric Culture Chronologies
for Southern California*

			Coastal San Diego County		Interior San Diego County Northern	Southern	Syntheses		
Year YBP	**Geologic Era**	**Years AD/BC**	**Rogers 1939, 1945**	**Moriarty 1966**	**Meighan 1954**	**True 1958, 1966, 1970**	**Warren 1968**		**Gallegos 2002 Reddy 2000**
Present		1950	Yuman III Culture		Luiseño	Diegueño	Yuman	Shoshonean	Late Prehistoric/Kumeyaay or Late Period (1,300 AD to present) Other Names: Diegueño/Yuman Cuyamaca Complex San Luis Rey I, II
	Late Holocene	1,500	Yuman II Culture		San Luis Rey I San Luis Rey II	Cuyamaca Complex			
1,000		1,000	Yuman I Culture		Shoshonean Intrusion				
		500 AD							
2,000		0			Transition or Hiatus?				Archaic or Early Period Other Names: Pauma Complex Encinitas Tradition La Jolla Complex San Dieguito
		BC 500							
3,000		1,000							
		1,500	La Jolla II Culture	La Jolla III			Encinitas Tradition		
4,000		2,000							
		2,500							
5,000		3,000		La Jolla II	Millingstone Substratum (La Jolla/Pauma Complexes)				
	Middle Holocene	3,500	La Jolla I Culture						
6,000		4,000							
		4,500		La Jolla I					
7,000		5,000							
		5,500	San Dieguito Culture						
8,000		6,000							
	Early Holocene	6,500							
9,000		7,000			San Dieguito		San Dieguito Tradition		
		7,500		San Dieguito					PaleoIndian
10,000		8,000							
		8,500							
	Pleistocene	9,000							

****(adapted from Moratto 1984 and Gallegos 2002)***

The lack of distinctive Clovis sites has not precluded assumptions about the antiquity of humans in San Diego prehistory, however. Some of the earliest archaeological investigations in San Diego County and in southern California were quick to provide evidence of Late Pleistocene occupation in California. Human skeletal fragments collected by Rogers between 1920 and 1935 from sites near La Jolla (SDM-W2 and SDM-W4) yielded amino acid dates of roughly 44,000 and 28,000 years, respectively. However, over 40 years later, researchers demonstrated that amino-acid dates differ substantially from those by radiometric techniques (Protsch 1978). In fact, radiocarbon analysis conducted on the skeletal fragments from Site SDM-W2 (La Jolla Shores) yielded early to middle Holocene dates ranging from 7,370 ± 70 to 5,460 ± 100 YBP (Moratto 1984). The Del Mar Man site (W-34) was once thought to be 46,000 years old but has been more recently dated to 5,400 YBP (Taylor et al. 1985).

George Carter and Herbert Minshall even proposed that people existed in San Diego County as long ago as 80,000 to 100,000 years ago, although these views are unconventional and not widely accepted (Moratto 1984). Carter and Minshall, examining locales in La Jolla Valley, Old Mission, Sweetwater River Valley, Mission Valley, and Texas Street, argued that people were in San Diego County by at least 40,000 years and possibly by 125,000 years ago. They based their claim on several items, including the association of a Pleistocene horse tooth near the La Jolla Valley site, climatic and geomorphologic data, and the perceived similarities between the San Diego cultural materials and artifacts found in Eurasian deposits that dated to the Sangamon Interglacial (80,000 years old). Several books were written by Carter, including *Earlier than You Think* (1980) and *Pleistocene Man at San Diego* (1957), and Minshall wrote *The Broken Stones* (1976). Most researchers dismiss the work of Carter and Minshall, asserting that their artifacts are naturally modified stones and their archaeological sites are natural geological features. Nonetheless, the work by Carter and Minshall contributed to the argument for early occupation of San Diego County by Pleistocene humans.

3.2.2 Archaic Period (circa 9,000 to 1,300 YBP)

The Archaic Period of prehistory begins with the onset of the Holocene around 9,000 YBP. The climate at the beginning of the early Holocene is marked by cool/moist periods and an increase in warm/dry periods and sea levels. The San Diego shoreline at 8,000 YBP, depending on the particular area of the coast, was near the 20-meter isobath, or one to four kilometers further west than its present location (Masters 1983). In Arizona and southern California, the juniper woodlands below approximately 5,300 feet AMSL persisted into the early Holocene but above approximately 6,000 feet AMSL, conifer forests gave way to modern vegetation types (Van Devender and Spaulding 1979). Several individuals have documented the recession of the once abundant coniferous forests during the early Holocene (Axelrod 1967; Heusser 1978).

The rising sea level during the early Holocene created rocky shorelines and bays along the San Diego Coast by flooding valley floors and eroding the coastline (Curray 1965; Inman 1983). Shorelines were primarily rocky with small littoral cells, as sediments were deposited at bay edges but rarely discharged into the ocean (Reddy 2000). These bays eventually evolved into lagoons and estuaries, which provided a rich habitat for mollusks and fish. In particular, *Argopecten* and *Chione*, seem to dominate the mollusks gathered by prehistoric people during this time (Gallegos 1992). The warming trend and rising sea levels generally continued until the late Holocene (4,000 to 3,500 YBP).

At the beginning of the late Holocene, sea levels stabilized, rocky shores declined, lagoons filled with sediment, and sandy beaches became established (Gallegos 1985; Inman 1983; Masters 1994; Miller 1966; Warren and Pavesic 1963). Many former lagoons became saltwater marshes surrounded by coastal sage scrub by the late Holocene (Gallegos 2002). The filling of lagoons with sediment and the expansion of sandy beaches generally occurred first in northern San Diego County and then ultimately spread south toward the southern portion of the county. This was in large part due to the greater size of the drainage systems in the northern part of the county (Inman 1983; Masters 1994). The sedimentation of the lagoons is significant in that it had profound effects on the types of resources available to prehistoric peoples. Habitat was lost for certain mollusks, namely *Chione* and *Argopecten*, but habitat was gained for other mollusks, particularly *Donax* (Gallegos 1985; Reddy 2000). The larger mollusks, *Chione* and *Argopecten,* are found in lagoons and estuaries but the smaller mollusk, *Donax,* prefer gentle, sloping beaches. Several researchers have documented the shift in the use from *Chione* and *Argopecten* during the end of the Late Holocene by prehistoric occupants (Laylander 1993, 2005). In northern San Diego County, *Donax* has been found in significant quantities in late prehistoric deposits along the coast and inland, whereas in earlier deposits, *Donax* is non-existent or rare (Cardenas and Robbins-Wade 1985; Corum 1991; Hector 1983; Quintero 1987). The decline in larger shellfish, loss of drinking water, and Torrey Pine nuts resulted in a major depopulation of the coast as people shifted inland to reliable freshwater sources and intensified their exploitation of terrestrial small game and plants, including acorns (originally proposed by Rogers 1929; Gallegos 2002). San Diego and Mission Bays, however, are unique in that they did not experience the infilling of sediment witnessed by smaller lagoons and estuaries to the north because the tidal flushing that occurs there washes sediment into the ocean (Masters 1988). As a result, the coast south of Mission Bay did not witness the same major population decline.

In San Diego County, the Archaic Period is associated with a number of different cultures, complexes, traditions, or horizons including San Dieguito, La Jolla, Pauma, Encinitas, and Millingstone. Archaeologists have differing opinions regarding the age and importance of these different periods of San Diego prehistory. The following summary of the Archaic begins with an examination of the San Dieguito followed by a discussion of the La Jolla and Pauma.

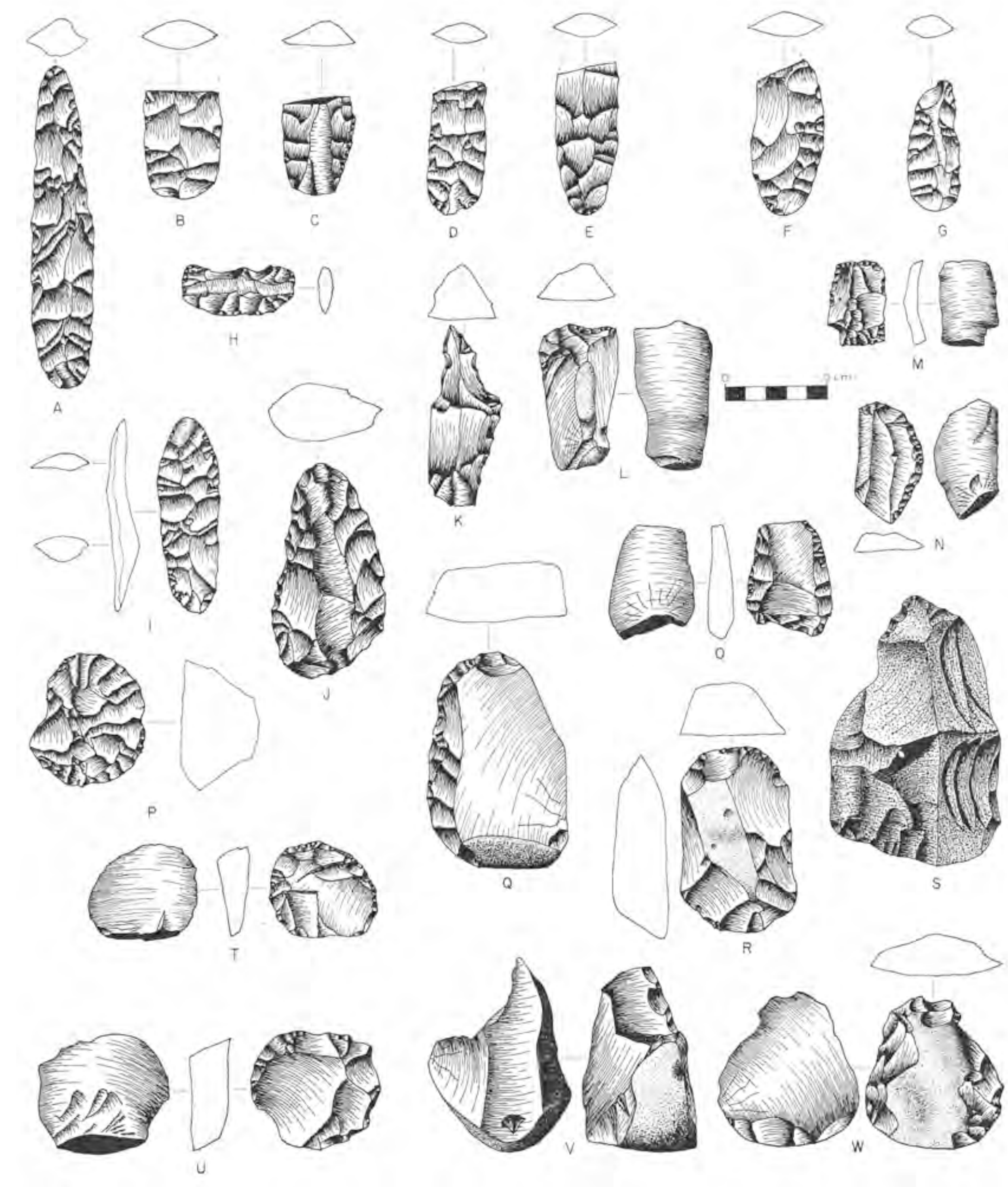
The San Dieguito Complex is probably the least understood cultural manifestation in the region because concise radiocarbon dates on stratigraphically intact, undisturbed San Dieguito deposits, or sites, is lacking. Most San Dieguito sites, or sites with San Dieguito-like artifacts, are surface assemblages and those with subsurface deposits have usually been disturbed by faunalturbation or modern agriculture activities. Some scholars view the San Dieguito as the earliest complex in San Diego prehistory (Warren and True 1961; Warren 1967); whereas other researchers, propose that the San Dieguito Complex represents the inland hunting component of a generalized hunting and gathering culture of the Holocene and lump it in with the La Jolla and Pauma Complexes (Kaldenberg 1982; Norwood and Walker 1980; Gallegos 1991). Some researchers (Bull 1987; Raven-Jennings and Smith 1999a) have also proposed that the phases of the San Dieguito (I, II, and II) represent different stages of lithic tool procurement and production, and the presence of hunting-type tools represents use of terrestrial resources inland (Berryman and Berryman 1988; Gallegos 1987).

Malcolm Rogers was the first to refer to the earliest artifact assemblages in San Diego County as belonging to the San Dieguito Culture. Beginning in the 1920s, Rogers conducted investigations of archaeological sites located along the San Diego and Baja California coast and surveys of the San Dieguito Plateau and the Colorado Desert (Rogers 1966). In 1920, Malcolm Rogers stated that he "discovered the San Dieguito Industry at what is now known as the C.W. Harris Site" (Rogers 1939:70; Warren 1966). The Harris Site (SDM-W-198/SDI-149) became known as a San Dieguito-type site through Rogers' and later Warren and True's (1961) investigations. Interestingly, however, Rogers never published his research at the site. His research at the Harris site and his perceived views on the San Dieguito Culture would later be published in 1966 by Claude Warren and by H.M. Wormington, E.L. Davis, and Clark Brott.

Rogers did publish the results of his archaeological investigations concerning the surface examination of San Dieguito sites along the San Dieguito Plateau and in the Colorado Desert (1929 and 1939). In 1929, Rogers had identified four loci of San Dieguito sites in San Diego County based on areas of intensive occupation, each having at least one large site dignified with the term village, including three in the Coast Range (also referred to as Black Mountain volcanics) between San Marcos Creek on the north and Los Peñasquitos Creek on the south. Generally, most San Dieguito sites lack midden and are often eroded, although the C.W. Harris site is a notable exception (Rogers 1929). Artifacts designated by Rogers (1929 and 1939) as diagnostic of this complex were tools typically associated with hunting tool manufacture and animal procurement and processing. These artifacts included teshoa flakes, beveled flakes, notched cobbles (rare), cores, hammerstones, cleavers, choppers, pulping planes, scraper planes, leaf-, lancelote-, and triangular- shaped bifaces and knives, hammerstones, choppers, amulets or crescents, a variety of scrapers (ovoid, keeled, domed, flake, side, and end), spokeshaves, reamers (drills and gravers), and borers (Rogers 1939). These tools were often made from felsite, now referred to as Santiago Peak Volcanics (SPV) or FGM (fine-grained metavolcanic material), for which the Otay area was a major source. Rogers (1939) found similarities between the artifact assemblages in San Diego County and those in the Colorado River Desert. The only difference Rogers (1939) noted was that those in the desert contained "stemmed blades" (stemmed projectile points) whereas "stemmed blades" or points were absent in San Diego County. These early lithic industries were at first labeled Malpais, Scraper-Makers, and Playa; however, these terms were eventually subsumed under the San Dieguito Complex (Rogers 1939), which later would be divided into San Dieguito I, II, and III. Plate 3.0–3 shows artifacts considered typical of the San Dieguito Culture.

Rogers (1939 and 1958) originally believed the San Dieguito culture lasted approximately 2000 to 3000 years from 2,000 B.C. to 1,000 B.C. through 800 A.D. Rogers based this assumption on the observation that the artifacts were associated with a culture that was earlier than the Yuman or Shoshonean culture since the San Dieguito artifacts displayed patina, desert varnish, and sandblasting whereas the Yuman assemblages, besides containing additional artifacts like pottery, did not show patina, desert varnish, or sandblasting (Rogers 1966). Furthermore, Rogers (1939 and 1958), citing Antevs' 1938 climatic study, stated that since San Dieguito-like artifacts were found around the shorelines of extinct stands of desert lakes, this offered evidence that these sites were inhabited during a period of cooler/moister climate that occurred at approximately 2,000 B.C. (4,000 YBP). According to Warren (1966:18), before Rogers' death and after dates on La Jolla coastal sites yielded evidence of occupation at 6,000 YBP, Rogers had decided that the San Dieguito was much older than 2,000 B.C.

In 1920, Rogers discovered the C.W. Harris Site (SDM-W-198/SDI-149 and SDI-316) located on a low terrace of the San Dieguito River. The Harris site is better characterized as a series of loci with different subsurface components and is now referred to as the Harris Site Complex (Carrico et al. 1991). The subsequent investigations of the C.W. Harris Site by Rogers (1939) and Warren and True (1961) provided the first stratigraphic evidence to place the San Dieguito as the earliest cultural complex in San Diego County based upon their interpretations. The San Dieguito component was a deeply buried deposit (approximately seven feet below the modern surface) and was below subsurface deposits of La Jolla and Yuman artifact assemblages. Although Rogers never produced a report, Warren (1966) compiled the notes and records from Rogers' 1938 investigation of the site, which involved the investigations of two loci, one in the area south of Lynch wash (Locus I) and the other in the mid-channel of the San Dieguito River (Locus II). Rogers (in Warren 1966) identifies San Dieguito II artifacts in the "E stratum of Locus I," San Dieguito III artifacts in the "M stratum of Locus II," and La Jolla II and Diegueño artifacts in "Stratum B of Locus I." Artifacts identified as San Dieguito II in the "E stratum of Locus I" included a number of different scrapers (ovoid, domed, flake, end, and side), scraper planes, amulets or crescents, and leaf-, triangular-, and lancelote- shaped projectile points, bifaces, and knives. Artifacts identified as San Dieguito III in the "M stratum of Locus II" included a variety of scrapers (domed, ovoid, and side), square-based knives, ovoid to leaf-shaped knives and bifaces, and triangular (Humboldt) and stemmed-eared (Elko) projectile points. Rogers suggested that the marine shell (mostly *Chione* and *Pecten*) recovered in the "M stratum" of Locus II represented the first San Dieguito midden with marine shell (Rogers in Warren 1966: 12). La Jolla II and Diegueño artifacts (found in "Stratum B of Locus I") were identified as unifacial and bifacial manos, oval basin metates, primary flake scrapers (teshoa flakes, cortex-based scrapers, and cortex back scrapers), domed scrapers, and miscellaneous flake scrapers (pentagonal, triangular, end, and irregular), hammer/choppers, choppers, cores, notched and concave-base projectile points (small Humboldt and Cottonwood projectile points), and knives (flat-based and rectangular). Additionally, Rogers discovered disturbed La Jolla II burials in his 1938 excavations (Rogers in Warren 1966).



A-G, Foliate knives or points; H, crescent; I, knife; J, knife blank; K, beaked scraper; L, M, end scrapers; N, O, side scrapers; P, scraper plane; Q, not identified; R, double-ended scraper; S, cleaver; T, U, ovoid scrapers; V, chopper; W, primary flake scraper.

Plate 3.0–3 San Dieguito artifacts (after Moratto 1984:Figure 3.7).

In 1959, Claude Warren and D.L. True directed an UCLA Archaeological Survey team in excavations at the Harris Site (SDI-149 and SDI-316) and specifically in what Rogers referred to as the multi-component Locus I. The investigations by Warren and True (1961) led to an update of the cultural sequence of San Diego prehistory and to place the San Dieguito Complex as the earliest culture in San Diego prehistory. They characterized San Dieguito sites as located on mesas and ridges, small in size, lacking midden, and often heavily eroded. Warren and True (1961) and Warren (1967) identified San Dieguito artifacts as leaf- and lancelote-shaped knives, knife blanks (bifaces), and projectile points (occasional stemmed), a variety of scrapers (ovoid side, keeled side and end, rectangular side, rectangular end, triangular end, domed, and flake), crescent amulet (eccentric Type 5 crescent: Fenenga 1984) or eccentric crescents, engraving tools (gravers), choppers (crude), hammerstones (pebble), core hammers, and cores. The lithic tools are percussion flaked and occasionally some are pressure flaked. Pottery is absent, and ground stone is extremely rare if present at all in San Dieguito sites (Warren and True 1961). Most San Dieguito lithic tools were made of locally available felsitic materials (SPV volcanics), but other local fine-grained volcanics and occasionally imported materials were used. Warren and True (1961) concluded that the San Dieguito were an early population, relatively small in number, whose primary subsistence was hunting.

Warren and True (1961) submitted two samples for radiocarbon analysis. The first was conducted on shell (*Chione californiensis*) collected by Rogers in 1938 from the San Dieguito III component he identified in Stratum M. The sample (LJ-136) resulted in a radiocarbon date of 4,720 ± 160 YBP (calibrated 2,770 B.C. ± 160). The second sample submitted was carbonized wood and seeds collected from what was called a La Jolla feature (Feature 5 – possible hearth or roasting pit). This sample (LJ-202) yielded a date of 6,300 ± 200 YBP (calibrated 4,350 B.C. ± 240). The first date of 4,720 ± 160 YBP, from Rogers' San Dieguito III component, was dismissed by Warren and True (1961) because the sample had been collected 21 years before it was assayed, the La Jolla component of the Harris site yielded an older radiocarbon date, and a series of radiocarbon dates (7,370 ± 100 YBP, 7,300 ± 200 YBP, and 5,460 ± 100 YBP) from coastal La Jolla sites yielded older dates (Hubbs et al. 1960; Moriarty et al. 1959). They reasoned that since the La Jolla Feature 5 was separated by the San Dieguito III component by 32 inches of consolidated and partially cemented river silt and that since the San Dieguito component was positioned in deposits below the La Jolla component, the San Dieguito had to be older than the La Jolla. Moreover, they reasoned that since La Jolla on the coast had been given an initial date of approximately 7,500 YBP (5,500 to 6,000 B.C.), then the San Dieguito had to date to at least 8,000 YBP (6,000 B.C.). Additional charcoal and carbonaceous earth samples collected from within the San Dieguito component during additional excavations in 1965 by Warren (1967), yielded calibrated radiocarbon dates of 6,540 B.C. ± 400 (A-724 and A-725) and 7,080 B.C. ± 350 (A-722A). These dates led Warren (1967) to suggest an age of over 8,000 YBP for the San Dieguito and "probably in the neighborhood of 10,000 YBP" for the earliest complexes (in reference to San Dieguito I) given that San Dieguito-type artifacts had been found further east around the lakeshores of Pleistocene lakes.

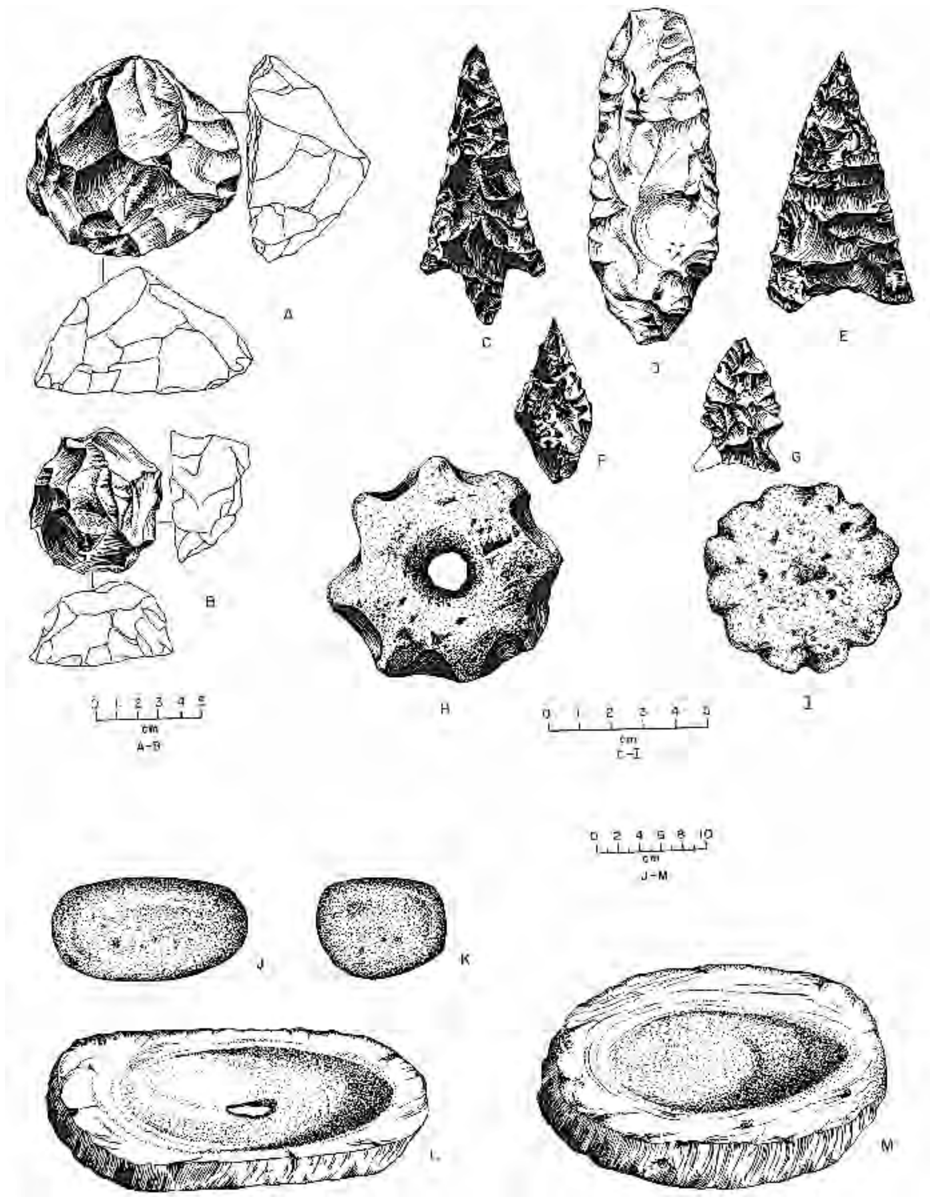
In 1964, Paul Ezell with San Diego State College (now San Diego State University) carried out additional work at the Harris Site (SDI-149 and SDI-316). Ezell's (1977) research largely supported the earlier work of Rogers and Warren. La Jolla cobble and Yuman fire hearths were excavated resulting in a radiocarbon date on charcoal from a La Jolla roasting pit of 3,910 ± 50 YBP (Beta No. 38827). Ezell, in a later 1987 publication, thought that the Harris Site (SDI-149 and SDI-316) was atypical of the San Dieguito Complex and not a "type site" of the San Dieguito. Additional work at the Harris Site was carried out by Ezell and Carrico in 1977 and Carrico et al. in 1991. In the latter study, Carrico et al. (1991) substantiated what was known already about the Harris Site Complex and recommended that the site be considered a Historic District and eligible for listing on the National Register of Historic Places. A bulk soil sample taken from a hearth feature resulted in a date of 3,470 ± 110 YBP (Beta No. 38826).

Artifacts considered diagnostic of the San Dieguito are similar to artifact assemblages located further east in the Great Basin and American Southwest. The San Dieguito artifacts are also similar to the artifact assemblages found around the presumed late Pleistocene shorelines of Lake Mojave (Campbell 1937), Tonopah Lake (Campbell 1949), Panamint Basin (Davis et al. 1969), and Owens Lake (Antevs 1938; Campbell 1949). Furthermore, the San Dieguito tool assemblage resembles that of the Western Lithic Co-Tradition (Davis et al. 1969) and the Western Pluvial Lakes Tradition (Bedwell 1970; Moratto 1984). Additionally, excavations conducted at Danger Cave in Utah (Jennings 1957), Ventana Cave in Arizona (Haury 1950), and Newberry Cave in the Mojave Desert (Smith et al. 1957) provided stratigraphic evidence for San Dieguito being the earliest culture as San Dieguito-like artifacts were found in the basal levels of the caves' subsurface deposits. The results of these studies, the investigations of the Harris Site by Warren and True (1961), the suggestion that the earliest phase of the San Dieguito dated to 10,000 YBP (Warren 1967), and the lack of Clovis sites, led to the conception that the San Dieguito represented the earliest cultural complex in San Diego prehistory. The San Dieguito culture became synonymous with PaleoIndian and for many current researchers it remains a viable PaleoIndian cultural complex (Reddy 2000).

The basis for the identification of the San Dieguito Complex has been lithic artifact morphology, as described by Rogers (1939), Warren (1966), and Davis et al. (1969), and the use of local green metavolcanic material in tool manufacture (especially in the Otay area), but very few absolute dates have been confirmed. Many archaeologists continue to debate whether the San Dieguito Complex continued to occupy San Diego County or abandoned the area circa 8,000 YBP (SDCAS 1987). Sites in San Diego County that have been reported as early Holocene (circa 9,000 to 7,000 YBP) and/or with possible San Dieguito components include the Agua Hedionda sites (UCLJ-M-15 and SDI-10,695, W-131; Koerper et al. 1986), Rancho Park North (SDM-W-49; Kaldenberg 1982), Batiquitos Lagoon (Gallegos 1992), San Dieguito Lagoon/River Valley (Norwood 1980; Norwood and Walker 1980; Smith 1986, 1987; Warren 1967), San Elijo Lagoon (Gallegos 1992), Peñasquitos Lagoon (Smith and Moriarty 1985a), La Jolla/UCSD (Moriarty et al. 1959; Shumway et al. 1961), and Tijuana Lagoon/Otay Mesa (Bingham 1978; Breschini et al. 1990). Recently, however, there have been sites that have been reported as having a San Dieguito component or having San Dieguito-like artifacts but that are dated to the middle and late Holocene. An investigation of the San Dieguito Scraper Hill Site (SDI-8330/W-240) by Raven-Jennings and Smith (1999a) provided support for Rogers' original age estimation of the San Dieguito dating between 4,000 to 2,800 YBP. Similar assemblages have also been found in the Otay region in contexts younger than 5,000 YBP (Smith and Moriarty 1985b; Gallegos and Kyle et al. 1990). Clearly, more research is needed regarding the temporal placement and definition of the San Dieguito Complex.

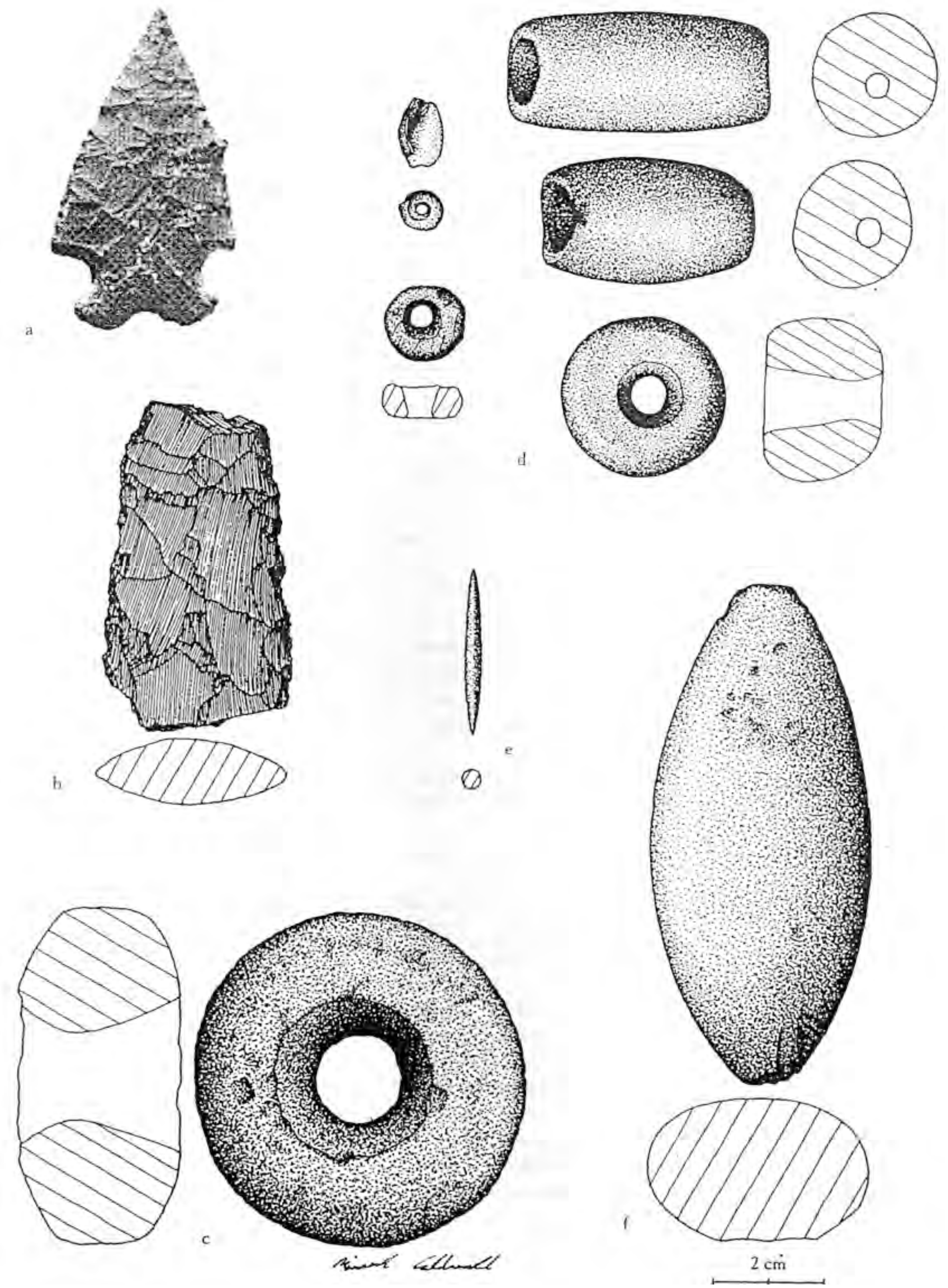
Plate 3.0–4 Illustration of a hypothesized early prehistoric coastal settlement.

In any event, at approximately 8,000 YBP a different yet major prehistoric cultural complex, called the La Jolla Complex (Encinitas Tradition, Millingstone Horizon), appears in the archaeological record along the San Diego coastal region (Plate 3.0–4). Radiocarbon dates from sites attributed to this complex span over 7,000 years of prehistory. The La Jolla Complex is best recognized for its pattern of large coastal sites, shell middens, basin metates, manos, cobble-based tools, discoidals, and flexed human burials (Shumway et al. 1961; Smith and Moriarty 1985a). While scrapers are the most recognized tool type, coastal La Jolla sites also contain a large quantity of utilized flakes, which may have been used to pry open marine mollusks, and large numbers of manos and metates. Plates 3.0–5 and 3.0–6 show a sample of La Jolla-type artifacts.



A, B, scraper planes, Phase I; D, E, projectile points of Phase I types; C, F, G, projectile points of Phase II types; H, I, cogged stones; J, K, manos; L, M, millingstones.

Plate 3.0–5 La Jolla Artifacts (after Moratto 1984:Figure 4.6).



b, biface knife; c, doughnut stone; d, beads; e, bone gorge; f, plummet stone.

Plate 3.0–6 Middle Holocene Artifacts (after Masters and Gallegos 1997:Figure 2.4)

Assemblages at coastal sites indicate a subsistence pattern focused on mollusk collection and near-shore fishing, suggesting an incipient maritime adaptation with regional similarities to more northern sites of the same period (Koerper et al. 1986). The presence of obsidian from the Coso source has also been attributed as a characteristic of Archaic La Jolla complex sites in San Diego and Orange Counties (Koerper et al. 1986; Erickson et al. 1989). This obsidian source was located several hundred miles northeast of San Diego County and was likely obtained through trade with groups situated further north. Shellfish have been interpreted as the dietary staple, although both nuts and grasses were also an important part of the diet. The La Jolla Complex was considered different from the prior San Dieguito Complex by being more focused on gathering activities that emphasized shellfish, plants, and fish, rather than hunting activities, which focused on terrestrial large game. Regionally, the La Jolla Complex is associated with the Encinitas Tradition (Warren 1968) and Millingstone Horizon (Wallace 1955), which characterize the Archaic Period throughout coastal southern California.

The earliest sites from this period are mostly found in the northern portion of San Diego County and are the same sites as those reported for the San Dieguito Complex, including the Harris Site Complex (Rogers in Warren 1966; Warren 1967), Rancho Park North Site (Kaldenberg 1982), Agua Hedionda Sites (Koerper et al. 1986), Batiquitos Lagoon (Gallegos 1992), Peñasquitos Lagoon Sites – W-20 (Smith and Moriarty 1985a), La Jolla/UCSD sites (Moriarty et al. 1959; Shumway et al. 1961; Gallegos 1989), Tijuana Lagoon/Otay Mesa (Gallegos 1992), and Ballast Point/San Diego Bay (Gallegos and Kyle 1988). Most lagoonal sites exhibit continuous occupation from 9,000 to 3,500 YBP (Gallegos 1992) and in northern San Diego County coastal lagoons supported large populations circa 6,000 YBP, as shown by numerous radiocarbon dates from the many sites adjacent to these lagoons (Carrico et al. 1991). The collection of shellfish and seeds, fishing, and the hunting of terrestrial game and marine animals have been documented through the archaeological investigations of these coastal lagoon sites. The distribution of radiocarbon dates suggests that coastal adaptations supported a sustainable population density during the middle Holocene between 7,500 YBP and 3,500 B.P (Masters and Gallegos 1997). Archaeological investigations at the Ballast Point Site (Gallegos and Kyle 1988) indicate that a larger portion of the diet was filled with marine, rather than terrestrial resources. Evidence from dietary analyses and fishing tools, such as gorges and composite fishhooks, and the implied use of boats, suggests an intensification of the San Diego maritime pattern in the middle Holocene – one that resembles the Santa Barbara Channel maritime tradition (Masters and Gallegos 1997).

In northern San Diego County, between 4,000 and 3,000 YBP the lagoons filled with sediment, the most important resources, particularly mollusks and fish, were lost or diminished, and many of the coastal sites were thought to have been abandoned. The paucity of archaeological sites dating to 3,000 to 1,300 YBP in northern San Diego County has been used as evidence to support this argument (Gallegos 1992). Recent investigations at sites along the northern San Diego County coast, including Camp Pendleton, and new investigations at Agua Hedionda Lagoon, Buena Vista Lagoon, Los Peñasquitos Lagoon and Sorrento Valley, have challenged the coastal decline model by showing that coastal sites were inhabited during this period and that there was increased reliance on less optimal resources, such as small shellfish and near shore schooling fish (Byrd and Reddy 2002). At Site W-20 on Los Peñasquitos Lagoon, radiocarbon dates for the village site document a continuous occupation from 7,140 to 2,355 YBP. During this occupation span of 5,000 years, factors of environmental change and overfishing of shellfish were documented by the gradual shifting in shellfish recovery patterns and decline in the size (and maturity) of all shellfish species (Smith and Moriarty 1985a). Investigations at coastal lagoon sites farther south around the San Diego Bay, such as Ballast Point (Gallegos and Kyle 1988) have shown continuous occupation throughout the period between 6,600 and 1,300 YBP. San Diego Bay, being larger and influenced by tidal flushing, did not fill with sediment, as did the northern San Diego lagoons and estuaries (Masters 1988). Additionally, at Chollas Creek on the eastern shore of San Diego Bay, a midden extending into the intertidal zone yielded radiocarbon dates of 2,100 YBP and 1,450 YBP (Masters and Gallegos 1997).

In any event, there appears to have been a change in the subsistence and settlement strategies to include an increase in the use of terrestrial inland resources at the end of the middle Holocene and beginning of the Late Holocene. Populations shifted inland to river valleys and intensified exploitation of terrestrial animals and plants, possibly including acorns (Rogers 1929). Inland La Jolla sites have been reported in transverse valleys and sheltered canyons, and have been termed “Pauma Complex” (True 1958; Warren et al. 1961; Meighan 1954) in northern San Diego County. Pauma Complex sites, as proposed by True and others, represented inland manifestations of the coastal La Jolla occupation and were considered distinct from earlier coastal sites given their lack of subsurface deposits, marine shell, and bone. By definition, Pauma Complex sites share a predominance of grinding implements (manos and metates), lack mollusks, have greater tool variety, including atlatl dart points and quarry-based tools, and seem to express a more sedentary lifestyle with a broader range of resources utilized than sites from the earlier San Dieguito period. True (1958) initially suggested that inland Pauma Complex sites were similar to San Dieguito sites based on the presence of crescentics, bifaces, and projectile points. The dependence on terrestrial resources is seen by some investigators as representing a Campbell-like subsistence focus based on the hunting of large and small mammals and the collection of hard seeds and roots (True 1958; Gallegos 1985). Subtle modifications in the artifact assemblage are interpreted as a response to changing environmental conditions, which required an increasingly diversified economy focused on terrestrial resources.

Data from inland sites support the idea that settlement patterns may have changed at the end of the middle Holocene to compensate for declining marine resources. In particular, the greatest period of occupation at the Rolling Hills Ranch sites was the end of the middle Holocene and beginning of the late Holocene or between 5,800 YBP to 2,140 YBP (Smith et al. 2004). The Scripps Poway Parkway Site SDI-4608c also showed evidence of being more intensely occupied at the beginning of the late Holocene, around 3,400 YBP, given that a greater variety of activities, including subsistence, domestic, and ritual were performed on site. Furthermore, the

Rancho San Diego sites in the Sweetwater Valley show repeated and intensive occupation of inland sites at the beginning of the late Holocene (Byrd and Serr 1993). The archaeological investigations of inland Archaic sites have not been as intensive and varied as those investigations conducted at coastal sites. In part, this is due to the visibility of coastal sites as historically, development in San Diego County advanced from west to east. Nevertheless, as San Diego County continues to grow eastward, more inland archaeological sites will be investigated and information gathered will be used to update the culture chronology.

In summary, archaeological research indicates that San Diego County was occupied between 9,000 YBP and 1,300 YBP by a population(s) that utilized a wide range of both marine and terrestrial resources. Overlapping radiocarbon dates and artifact types between sites identified as San Dieguito, La Jolla, and/or Pauma suggest a generalized hunting and gathering pattern that was employed for over 8,000 years. Rather than two separate and distinct cultural complexes, the San Dieguito and La Jolla (and variations within) likely represent differences in site types and uses of marine and terrestrial resources. The nomenclature using San Dieguito, La Jolla, Pauma, Encinitas, and Millingstone for an 8,000-year period of prehistory should be redefined to recognize a wider variety of site types, such as shell dumps, coastal lagoon sites, inland hunting camps, and quarry sites (Gallegos 1992). The large amount of marine shell and fish with some mammal bone found in early and middle Holocene sites next to coastal lagoons changes as one moves inland, where an increase in flakes, tools, and bone but a decrease in shell occurs (Gallegos 1992; Smith 1986). The transition in sites and artifact assemblages likely reflects the same people seasonally moving within the coastal drainages and exploiting both marine resources (fish and mollusks) and terrestrial resources (small and large game, plants, and lithic material). The future analysis of both coastal and inland sites will eventually provide a more complete assessment of the subsistence and settlement strategies employed by inhabitants of San Diego County during the Archaic Period and, likely, to the dismissal in use of terms San Dieguito and La Jolla as defining separate cultural complexes.

3.2.3 Late Prehistoric/Kumeyaay (1,300 to Contact)

Generally, most scholars agree that by around 1,300 YBP a culture different from the preceding Archaic culture occupied San Diego County. The Late Prehistoric Kumeyaay, located in the western part of San Diego, is recognized between 650 A.D. to Spanish contact (sixteenth century). The Kumeyaay were a complex hunting and gathering group that utilized a wide variety of marine and terrestrial resources. Cremation, pottery production and use, the bow and arrow, small points, the use of Obsidian Butte obsidian from Imperial Valley, and the reliance upon the acorn as a main food staple are the defining characteristics of the Late Prehistoric Kumeyaay (Gallegos 2002; Moratto 1984). Artifacts considered diagnostic of the Late Prehistoric are shown in Plate 3.0–7. The bow and arrow and buff and brown pottery appears to have spread west from the American Southwest across the Colorado Desert (Moratto 1984). The Kumeyaay adopted these technologies rather than being replaced by groups moving westward given that the language they speak is in the Yuman language family in the Hokan Stock. The

Hokan Stock is considered the oldest language stock in California prehistory (Kroeber 1925; Moratto 1984; Shipley 1978).

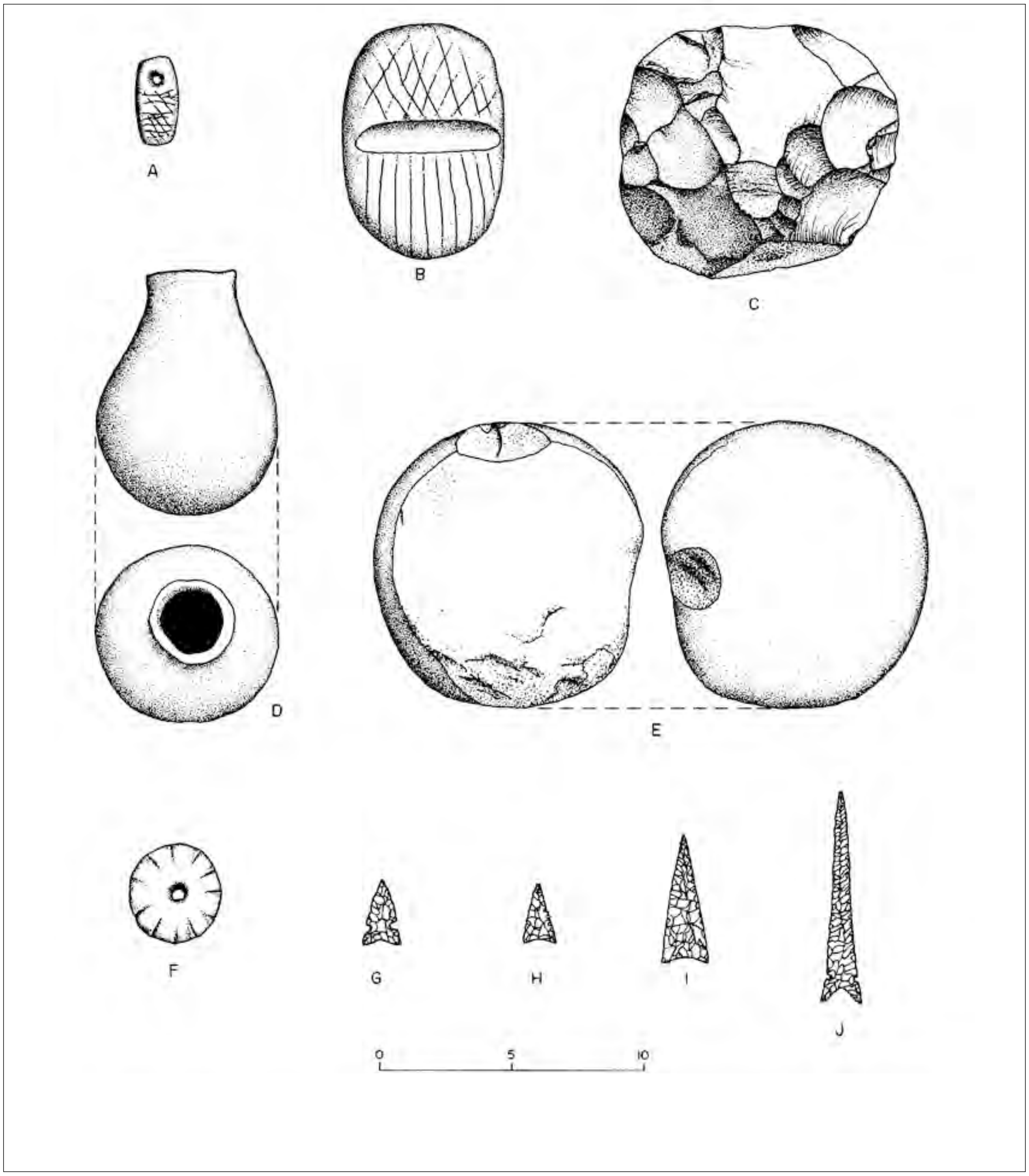


Plate 3.0–7 Late Prehistoric Artifacts (after Moratto 1984:Figure 4.16)

Firm evidence has not yet been recovered to indicate whether the people living during the Archaic Period are predecessors of the Kumeyaay or whether archaic people were culturally absorbed or pushed out. However, stratigraphic information recovered from Site SDI-4609 in Sorrento Valley suggests a hiatus of 650 ± 100 years between the occupation of the coastal area by the La Jolla Complex (1,730 ± 75 YBP) and the Kumeyaay (1,085 ± 65 YBP) (Carrico and Taylor 1983; Smith and Moriarty 1983). This gap in the archaeological record may represent the decline and abandonment of the coast by archaic people followed by the arrival of the Kumeyaay. On the other hand, continuous occupation during the transition from the Archaic Period to the Late Prehistoric Kumeyaay Period has been suggested by evidence found at the Scripps Poway Parkway site (Raven-Jennings and Smith 1999a) and the Rancho San Diego sites (Byrd and Serr 1993), which would generally support the linguistic information.

When contacted by the Spanish in the sixteenth century, the Kumeyaay occupied a territory bounded on the west by the Pacific Ocean, on the east by the Sand Hills, on the north by Agua Hedionda Lagoon, and on the south by Todos Santos Bay in what is now Baja California (Luomala 1978). A series of closely related, Yuman-speaking bands crisscrossed this region, divided into a northern (Ipay) and southern (Tipay) dialect (Figure 3.0–1). Variously referred to in the literature as Tipai-Ipai (Luomala 1978), Diegueño (after the mission at San Diego; Kroeber 1925), or lumped together with other groups under the term Mission Indians, in San Diego County these people refer to themselves as Kumeyaay. The disruption of native customs and subsistence makes the estimates of protohistoric populations and political units difficult. Nevertheless, the Kumeyaay population was estimated to be between 10,000 and 20,000 with as many as 85 villages (Carrico 1986; Luomala 1978; Shipek 1986). Figure 3.0–2 displays a map of ethnographic villages. The center of the villages contained the ceremonial and political structures and clusters of residential houses surrounded these structures (Shipek 1981). Each village community or rancheria consisted of a patrilineal band or tribelet that was politically independent and controlled territory over 10 to 30 miles of a particular river or creek drainage (Shipek 1981; Kroeber 1925; Luomala 1978). The resources in each band's territory were controlled by that band and another band could not trespass by gathering plants or hunting game without that band's permission. Bands, which were autonomous tribelets, claimed territorial areas and communally distributed resources, such as water, food caches, and agave. Use rights existed, by which families and individuals owned what they made or obtained. Leadership, often inherited, consisted of a clan chief and his assistant(s) and a hunt master. Dance and ceremonial leaders also existed (Luomala 1978). Clans were locally exogamous and patrilocal, so wives came from outside the area (Spier 1923).

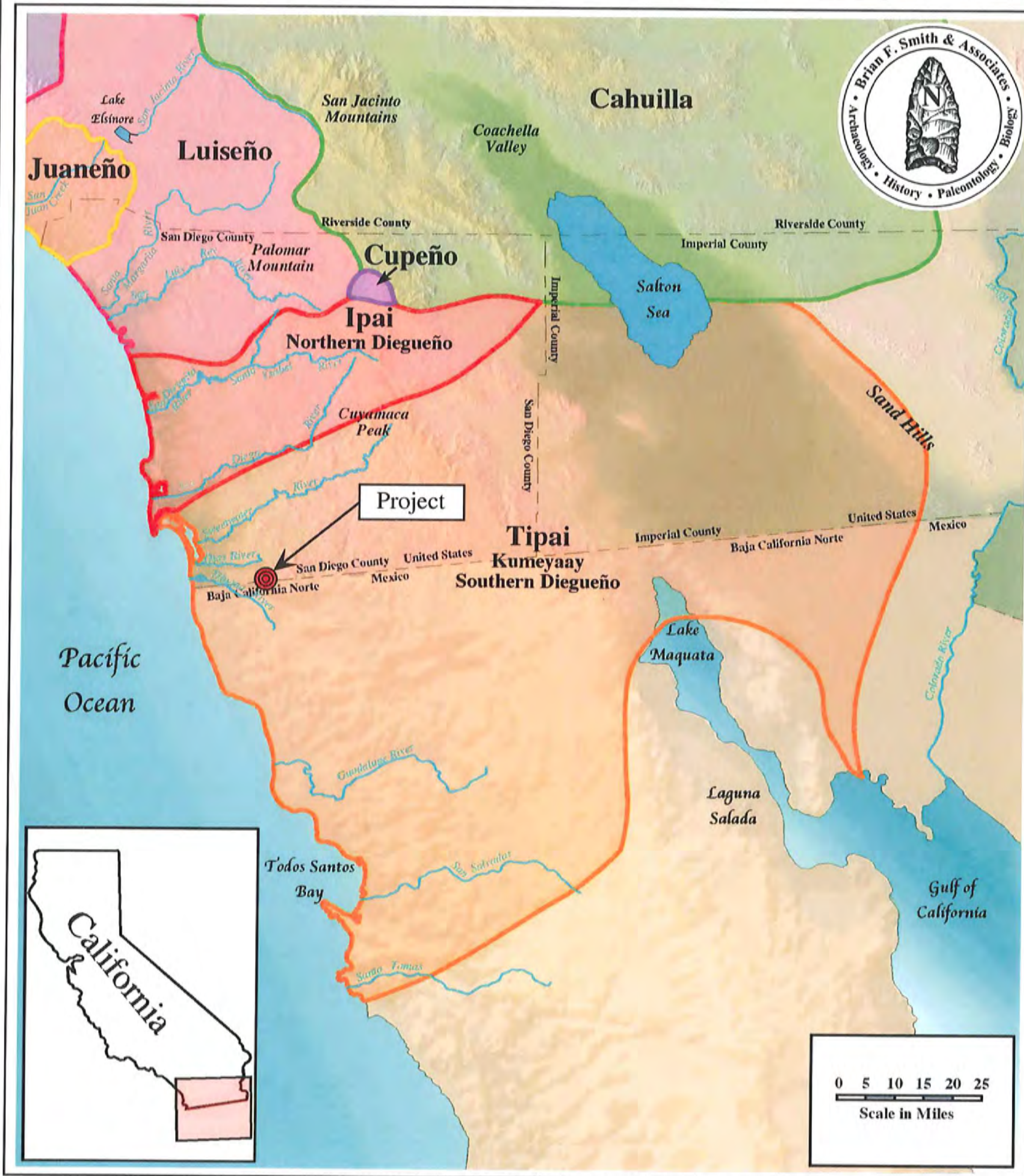


Figure 3.0–1
Ethnographic Map (circa 1770)
The Otay Business Park Project
(after Luomala 1978)

Figure 3.0–2
Ethnographic and Historic Villages of San Diego County
The Otay Business Park Project
(after Caricco 1986 and Bean and Shipek 1978)

Acorns, seeds, rabbits, hares, deer, fish, mollusks, and other marine resources are considered the major food resources of the Kumeyaay (Bancroft 1886; Carrico 1986). A study by Christenson (1990) found that acorns and rabbits meet minimal daily nutritional requirements, but that a broader diet is demonstrated in the ethnographic and archaeological record. The Kumeyaay traveled with the seasons and, unlike earlier inhabitants of the area, built their seasonal cycle around access to acorns and pinyons located in the higher elevations above 4,000 feet. In autumn, western Kumeyaay met with eastern Kumeyaay to harvest acorns, trade, and conduct ceremonies (Christenson 1990; Lee 1937). Winter was spent in sheltered valleys where neither high-elevation cold nor coastal fogs were a problem. Spring subsistence centered on the collection of buds and shoots and the animals that were attracted by them. Ripened grasses and fruits were focused on during the summer. Groups traveled to higher elevations for the harvesting of nut crops during the fall (Luomala 1978). Hunting augmented this vegetal diet, and foothill people visited coastal bands to fish. Large game was not common prey, and only a few men were trained in its procurement; more commonly, rabbits, rodents, snakes, and birds were captured informally (Luomala 1978; Spier 1923). Rabbits were killed communally at times, for in addition to the meat, large quantities of skins were desired for robes.

Luomala (1978) suggests that camping places were chosen based on access to water, protection from the weather, and abundant flora and fauna. Structures included dwellings, ramadas, and windbreaks. Dwellings were typically grass-thatched domes over a slight pit. Ramadas and windbreaks protected workplaces, with ramadas shading grinding areas and windbreaks shielding outdoor cooking areas. Conical acorn granaries were also constructed of interwoven willow withes (Spier 1923). Ceremonial shelters were open to the east, facing a dance circle with an outdoor pit (Luomala 1978). Sweathouses were semi-subterranean, pole and earth-covered structures that contained a fire pit in the center of the floor (Kroeber 1925). Houses were burned following the death of an occupant and former house sites were avoided because of fear of ghost-caused illnesses.

Personal possessions included ground stone tools, pottery of a variety of shapes, sizes, and functions, carrying nets, bows and arrows, throwing sticks, and tobacco pipes. Triangular stone-tipped arrows were used against big game, such as deer; otherwise, a sharpened wooden foreshaft sufficed. A hide quiver contained a pottery cup in which extras points were kept. Men carried a sharpened bone dagger from the foreshaft of a deer and women made basket awls of the same material (Spier 1923). Children sometimes had clay dolls. A game was played with stone disks that were 7.5 to 10 centimeters in diameter, where one disk was thrown and then used by the others as a target, much like a modern game of horseshoes (Spier 1923).

Clothing was minimal and was primarily made from willow bark, tules, or sedge. Women wore an apron of corded fiber held in place with a belt of their own hair (Gifford 1931). Men and children typically went naked, although men sometimes wore a waist cord from which they tied objects in order to transport. In cold weather, blanket/robes of rabbit skins or deer hides were worn. Basket hats were worn by both sexes, as well as sandals made from agave or yucca fiber (Spier 1923). Tattoos were popular decorations for both men and women; men also wore deer-shank earrings and a pendant, or a tube from the nasal septum.

Crystals were frequently kept for their magical properties and shamans would use them to facilitate communicating with spirits and to determine the cause of illness. Other ceremonial artifacts included deer hoof, gourd, or pottery rattles, ceremonial wands consisting of a hafted leaf-shaped point, eagle, owl and raven feathers, wooden flutes, soapstone mortars and pestles for jimsonweed preparation, and crescent-shaped stones for use in female puberty ceremonies (Spier 1923; Waterman 1910). Projectile points sometimes served ceremonial functions as well. Points were placed under rocks around camps to prevent bewitching, and were sometimes worn on a cord around the neck by shamans during dances for the same reason (Spier 1923). Possessions were not inherited; all were burned at the death of an individual or as a part of the yearly *keruk* mourning ceremony.

Generally, missionization for Kumeyaay was less swift than in other areas, owing to sustained resistance (Luomala1978). Nevertheless, as increasing numbers of Spanish and Mexican people, and later Americans during the Gold Rush, settled in the area, the Indian populations diminished as they were displaced or decimated by disease (Carrico and Taylor 1983). Additionally, as cattle ranching and farming in inland San Diego County became more prevalent after 1850, many native plants and animals were eliminated or their populations were severely narrowed, which disrupted food resources typically utilized by native peoples.

3.2.4 Historic Period

Exploration Period (1530-1769)

The historic period around San Diego Bay began with the landing of Juan Rodríguez Cabrillo and his men in 1542. Sixty years after the Cabrillo expeditions, an expedition under Sebastian Viscaíno made an extensive and thorough exploration of the Pacific Coast. Although the voyage did not extend beyond the northern limits of the Cabrillo track, Viscaíno had the most lasting effect on the nomenclature of the coast. Many of the names he gave to places have survived, whereas practically every one of Cabrillo's has faded from use. Cabrillo gave the name of “San Miguel” to the first port at which he stopped in what is now the United States; 60 years later, Viscaíno changed it to “San Diego” (Rolle 1969).

Spanish Period (1769-1821)

The Spanish occupation of the claimed territory of Alta California took place during the reign of King Carlos III of Spain. The powerful representative of the King in Mexico was Jose de Galvez, who conceived of the plan to colonize Alta California and thereby secure the area for the Spanish crown (Rolle 1969). The effort involved both a military and a religious contingent, with the overall intent of establishing forts and missions to gain control of the land and its native inhabitants through conversion. Actual colonization of the San Diego area began on July 16, 1769, when the first Spanish exploring party, commanded by Gaspar de Portolá (with Father Junípero Serra in charge of religious conversion of the native populations), arrived in San Diego to secure California for the Spanish crown (Palou 1926). The natural attraction of the harbor at

San Diego and the establishment of a military presence in the area solidified the importance of San Diego to the Spanish colonization of the region and the growth of the civilian population. Missions were constructed from San Diego to as far north as San Francisco. The mission locations were based on a number of important territorial, military, and religious considerations. Grants of land were given to persons who made applications, but many tracts reverted to the government for lack of use. As an extension of territorial control by the Spanish empire, each mission was placed so as to command as much territory and as large a population as possible. While primary access to California during the Spanish Period was by sea, the route of El Camino Real served as the land route for transportation, commercial, and military activities. This route was considered to be the most direct path between the missions (Rolle 1969). As increasing numbers of Spanish and Mexican people, and later Americans during the Gold Rush, settled in the area, the Indian populations diminished as they were displaced or decimated by disease (Carrico and Taylor 1983).

Mexican Period (1821-1846)

By 1821, Mexico had gained independence from Spain, and the northern territories were subject to political repercussions. By 1834, all the mission lands had been removed from the control of the Franciscan Order under the Acts of Secularization. Without proper maintenance, the missions quickly began to disintegrate, and after 1836, missionaries ceased to make regular visits inland to minister the needs of the Indians (Engelhardt 1920). Large tracts of land continued to be granted to persons who applied for them or to persons who had gained favor with the Mexican government. Grants of land were also made to settle government debts. The Otay Business Park Project is located in one such tract, known as the Rancho Otay (Estudillo). Rancho Janal borders the project area on the east and Rancho de La Nacíon borders the project area on the north.

Anglo-American Period (1846-Present)

California was invaded by United States troops during the Mexican War of 1846-1848. The acquisition of strategic Pacific ports and California land was one of the principal objectives of the war (Price 1967). At the time, the inhabitants of California were practically defenseless, and they quickly surrendered to the United States Navy in July 1847 (Bancroft 1886).

The cattle ranchers of the “counties” of southern California prospered during the cattle boom of the early 1850s. They were able to “reap windfall profit...pay taxes and lawyer’s bills...and generally live according to custom” (Pitt 1966). Cattle-raising soon declined, however, contributing to the expansion of agriculture. With the passage of the “No Fence Act,” San Diego’s economy changed from stock-raising to farming (Rolle 1969). The act allowed for the expansion of unfenced farms, which was crucial in an area where fencing material was practically unavailable. Five years after its passage, most of the arable lands in San Diego County had been patented as either ranchos or homesteads, and growing grain crops replaced raising cattle in many of the county’s inland valleys (Blick 1976; Elliott 1883 [1965]). By 1870, farmers had learned to dry-farm and were coping with some of the peculiarities of San Diego County's climate (*San Diego Union*, February 6, 1868; Van Dyke 1886). Between 1869 and 1871, the amount of cultivated acreage in the county rose from less than 5,000 acres to more than 20,000 (*San Diego Union*, January 2, 1872). Of course, droughts continued to hinder the development of agriculture (Crouch 1915; *San Diego Union*, November 10, 1870; Shipek 1977). Large-scale farming in San Diego County was limited by a lack of water and the small size of arable valleys; also, the small urban population and poor roads restricted commercial crop growing. Nevertheless, cattle continued to be grazed in inland San Diego County. For example, in the Otay Mesa area where the project is located, the "No Fence Act" had little effect, because ranches were still spaced far apart, and natural ridges kept the cattle out of growing crops (Gordinier 1966).

During the first two decades of the 20th century, the population of San Diego County continued to grow. The population of the inland county declined during the 1890s, but between 1900 and 1910, it rose by about 70 percent. The pioneering efforts were over; the railroads had broken the relative isolation of southern California, and life in San Diego County became similar to other communities throughout the west. After World War I, the history of San Diego County was primarily determined by the growth of San Diego Bay. In 1919, the United States Navy decided to make the bay the home base for the Pacific Fleet (Pourade 1967). During the 1920s, the aircraft industry also established itself at the bay (Heiges 1976). The establishment of these industries led to the growth of the county as a whole; however, most of the growth occurred in the north county coastal areas, where the population almost tripled between 1920 and 1930. During this time period, the history of inland San Diego County was subsidiary to that of the city of San Diego, which became a Navy center and industrial city (Heiges 1976). In inland San Diego County, agriculture became specialized, and recreational areas were established in the mountain and desert areas. Just before World War II, urbanization began to spread to the inland county, including the area of southern San Diego County that contains the current study area.

4.0 RESEARCH DESIGN

The cultural resource survey and significance testing program conducted for the Otay Business Park Project was required by the County of San Diego. The investigation included an archaeological reconnaissance of the property, records searches, recordation and collection of six isolates, and recordation and significance testing of 13 sites including 11 prehistoric sites and two multi-component sites containing both historic and prehistoric material culture. The cultural resource study for the Otay Business Park Project focused on the relationship between the environmental setting and the human response to environmental factors.

4.1 Prehistoric Research Design

The theoretical construct or research orientation was designed for the significant resources located within the project and focused primarily on the manifestation in the archaeological record of prehistoric subsistence patterns in the Otay Mesa area. The question posed as a working hypothesis is provided below.

<u>Research Question:</u>

> How did the prehistoric subsistence patterns in the Otay Mesa area change through time?

Previous research has indicated that the majority of sites within the Otay Mesa area represent a repetitive pattern of location characteristics and artifact assemblages (Carrico et al. 1992; Smith 1995). Sites in the vicinity are generally located on elevations near drainages; larger, more diverse sites are located in areas of vegetation transition, while smaller sites are located in zones of single or limited biological resources. Over time, environmental changes during the Archaic Period likely had a significant impact on the subsistence pattern in the Otay Mesa area. Therefore, in inland areas of the coastal zone, such as Otay Mesa, the semi-arid climate resulted in a concentration of water and other resources in drainage areas, resulting in a drainage-oriented settlement pattern. It follows that within the Otay Business Park Project, site location, frequency, and size would be expected to be directly related to resource abundance, particularly in ecological transition zones and drainage patterns and, furthermore, that as the environmental conditions changed, so too did the subsistence pattern.

Discriminating between the La Jolla (Archaic) and Kumeyaay (Late Prehistoric) subsistence practices is central to the issue of adaptive change. It appears likely that the transition between the foraging strategy of the La Jolla Period and the collector strategy of the Late Prehistoric Period was a gradual one, possibly fueled by the changing environmental conditions at the end of the Archaic Period. The degree to which the resulting archaeological assemblages represent adaptations to inland resources is of much interest in San Diego County (Laylander 1993). The inland expression of the La Jolla Complex is characterized by diminishing shellfish remains, a diversified tool kit made of inland quarried lithic material in addition to cobbles, a broad range of resource exploitation, increased milling, increased sedentism, and an emphasis on terrestrial hunting and gathering (Moriarty 1966; Gallegos 1991; Kaldenberg 1982; True 1958; Warren et al. 1961; Meighan 1954; and Forstadt et al. 1992). The apparent similarities between La Jolla Complex and Late Prehistoric Kumeyaay subsistence adaptations make distinguishing between the two a complicated issue, until the later appearance of pottery, smaller projectile points, cremations, and exotic lithic materials (Gallegos 1992; Christenson 1992). While it is generally understood that a gradual intensification in the use of a broad range of resources took place during this period, the ways in which this adaptation is expressed in artifact assemblages and settlement patterns is less well understood.

Determination of site function is an important aspect of this research topic, particularly as it relates to site location through time. The assignment of site function has generally been reduced to an extrapolation of primary site activities based on artifact recoveries (i.e. food processing, lithic production, milling, etc.). However, the word “function” is used to describe not only the activities conducted at a site, but also the role played by the site in the subsistence pattern of a particular group. Thus, the analysis of site function can be focused at two levels—site specific function and regional or subsistence function.

At the testing level, the small sample size taken from any one site is not typically sufficient to substantially advance our knowledge of prehistoric patterns. This is particularly true of small, localized sites such as the four lithic scatters investigated during this study, where the artifact assemblage is limited to single representatives from one or two different artifact classes (i.e. a single core or a single metate fragment). On the other hand, the fact that small lithic scatters are so common, particularly on Otay Mesa, indicates the importance of understanding the role of such limited-use sites in the prehistoric subsistence system as a whole through time. It follows that each site holds the potential to contribute to this type of study, however limited the data collected. As large-scale archaeological studies in areas such as Otay Mesa progress and more is understood regarding prehistoric subsistence systems, the data gathered from small, limited-use sites may find increased significance.

The optimal data needs for this study include the determination of the cultural affiliation and general dates of use for each site. It is hoped that time- and culture-sensitive artifacts will be recovered. The identification and recovery of any faunal remains found at any of the sites is very important, and the identification of the floral materials present at the time of prehistoric occupation is also essential. Any faunal materials that are recovered must be identified to species, and any other cultural information, such as evidence of cooking, butchering, or other modifications, must be analyzed. Such analysis will provide information regarding diet and subsistence patterns by revealing the types of plant and animal resources that were exploited and the environments that existed when the exploitation took place.

4.2 Historic Research Design

The historic research design for a testing program is to determine a site's function and ability to provide data to address regional and contemporary research issues within the context of the early development of Otay Mesa. Since the Spanish intrusion into the region, Otay Mesa has been used for ranching and agriculture. After Mexican independence in the mid 19^{th} Century, Rancho Otay (Estudillo) operated under one of the Mexican land grants. Other nearby land grants included Rancho Janal to the east and Rancho de La Nacíon borders to the north. After the United States annexed California, the "Homestead Act" and "No Fence Act" drew additional Euro-American settlers to Otay Mesa (Gordinier 1966). Expected resources include ranching, agricultural, homesteading, and farmstead material.

Investigation of historic cultural remains focused on the origin, association, and content of the deposits themselves. Questions of depositional history begin with determining whether the material assemblage at a site originated from one or multiple commercial and/or domestic contexts. In other words, does the testing indicate that the deposits represent multiple families and/or businesses from the local community or a single home or business?

<u>Research Questions:</u>

Are specific pastoral, agricultural, or post-war resort developmental episodes identifiable in the archaeological record?

In the case that features are identified, when were they constructed and can they be attributed to a specific occupation period or a specific occupant?

If artifact deposits are identified, under what circumstances was the material discarded? Can the deposition be attributed to a specific occupation period or specific occupant, or only to the community in general?

Do artifact deposits reflect specific information, such as gender, age, socioeconomic status, or ethnicity, regarding the people who lived or worked in the area? In terms of archaeological deposits identified within the current project, can a distinction be made between domestic and commercial deposition?

The research questions presented here were used to guide the accumulation of data to determine the site's significance. The basic data requirements for the study of historic economic practices include site features and site assemblages.

Archaeological Data Needs

Should cultural deposits be encountered, archaeological field investigations will focus on the following information:

- The size, shape, construction materials, and construction configuration of any remaining architectural elements or features that may indicate age, varying technologies, economic status, and ethnic patterning.

- The size, shape, and construction materials of features may suggest different functions (e.g., residence, industrial, garage, barn), indicating different economic activities.

- Integrity of the deposit or feature is critically important when determining significance.

Archaeological laboratory investigations will focus on the following information:

- The presence of discrete clusters of functionally related items may indicate a variety of different economic activities, such as mercantile enterprises, bootlegging, and general household refuse.

- The presence and relative density of non-local items, such as Chinese coins (*wens*), ceramics with Asian makers' marks, ethnic-specific ornamental items, and religious jewelry such as crosses, may suggest different ethnic groups.

- The presence and relative density of personal items, such as women's jewelry, combs, brushes, curlers, needles, thimbles, and garter clips, or men's work boots and cufflinks may indicate gender.

- The presence and relative density of subsistence items, such as different types of tins, bottles, shell, and bone remains, may suggest economic status, food availability, or personal preference.

- The presence and relative density of personal items, such as marbles, porcelain doll fragments, toy cars, cap guns, toy china fragments, and toy banks, may indicate the presence of children on the site.

- The types and quantities of food bone may reflect consumer trends and economic status.

- The presence and relative density of luxury items, such as ornamental lamps, fine china, silverware, and perfume bottles, may indicate economic status.

5.0 METHODOLOGY

The archaeological program conducted for the Otay Business Park Project consisted of archaeological records searches, an intensive survey of the entire project area, the collection and recordation of six isolates, and the significance evaluation of 13 cultural resources identified within the project boundaries. In addition, the periphery of one historic site was subjected to subsurface testing to determine if any elements of this site existed within impact boundaries. This archaeological study conformed to County of San Diego Archaeological/Historical Guidelines and appropriate statutory requirements of CEQA. Specific definitions for archaeological resource type(s) used in this report are those established by the State Historic Preservation Office (SHPO March, 1995) and the *Management Plan for Otay Mesa Prehistoric Resources, San Diego, California* (Gallegos et al. 1998).

5.1 Field Methodology

Survey Methodology

An intensive pedestrian survey, employing a series of north/south parallel transects spaced at approximately five- to ten-meter intervals, was conducted in order to relocate any previously recorded sites and identify any other archaeological resources within the project boundaries. These transects conformed to the general orientation of the project area. When resources were located, transects were reduced to three meters or less to accurately delineate the surface expression. All resources located were mapped using a Trimble Geo XT Global Positioning System (GPS) unit equipped with TerraSync software.

Testing Methodology

The *Management Plan for Otay Mesa Prehistoric Resources, San Diego, California* indicates that most sites located on Otay Mesa are sparse to moderate lithic scatters with no research potential (Gallegos et al. 1998). Because of the abundance of raw lithic materials provided by the Lindavista and Otay formations, the area provided easily accessible cobbles along the surface of the mesa. The management plan reveals that previous testing on Otay Mesa indicates the majority of these resources are solely a “smear or background noise” (Gallegos et al. 1998:vi) and, therefore, cannot address important research issues. According to the 2002 update of the East Otay Mesa Specific Plan area, specific sites on Otay Mesa were designated as requiring testing or other mitigation measures, while others were determined not significant (Russell et al. 2002). Nonetheless, because significant archaeological materials have been identified at sites previously listed as not significant according to the management plan, Phase II testing program was implemented for any resources with additional research potential.

Isolated artifacts do not possess any research potential beyond recording their location and characteristics; therefore, no additional archaeological assessment was necessary for these resources. In addition, sites that were previously tested and determined to be not significant were not retested. The remaining sites were subjected to the following field procedures.

Field procedures for the testing program included shovel tests, test units, a surface collection, and shovel scrapes. A series of shovel test pits (STPs) was instituted at each site to identify the nature and extent of any subsurface deposits. Placement of the STPs within each site was based on the combination of a specific sampling strategy (Figure 5.0–1) and the extent of the surface artifacts. The sampling strategy consisted of placing an initial STP in either the center of the densest portion of the surface collection, or within the center of previously recorded site boundaries where no adequate surface expression remained to locate the STPs. STPs were then radiated out from the site center to the site boundaries, while still taking into account the location of surface artifacts when applicable. The shovel tests were approximately 30 centimeters in diameter and were excavated in decimeter levels to a minimum depth of 30 centimeters or until a sterile level was encountered. All excavated soils were sifted through one-eighth-inch mesh screens.

Plate 5.0–1 Example of a surface scrape.

As indicated by the *Management Plan for Otay Mesa Prehistoric Resources, San Diego, California* (Gallegos et al. 1998), Otay Mesa possesses a large number of sites limited to surface expressions of raw lithic material procurement and do not posses subsurface deposits. Therefore, test units were only placed within sites possessing subsurface deposits, as indicated by the initial shovel tests. The test units, one square meter in size, were excavated in standard decimeter levels to a minimum depth of 30 centimeters or until a sterile level or impassable degenerated granite was encountered. All excavated soils were sifted through one-eighth-inch mesh screens. Although the majority of the sites possessed poor ground visibility, an intense surface collection was attempted to determine the exact surface expression of each site. Surface scrape (Plate 5.0–1) were used at all sites with poor ground visibility. The surface scrapes consisted of scraping and screening approximately four centimeters or less of the surface vegetation and humus layer within a one-square-meter area to expose the ground surface. Surface scrapes were placed at the same location as some of the STPs. In order to avoid confusion, surface scrapes were numbered with the same number as the corresponding STP. Missing surface scrape numbers in the catalogs are not indicative of excavated shovel scrapes with no recovery. Figure 5.0–1 shows the surface scraping sampling strategy.

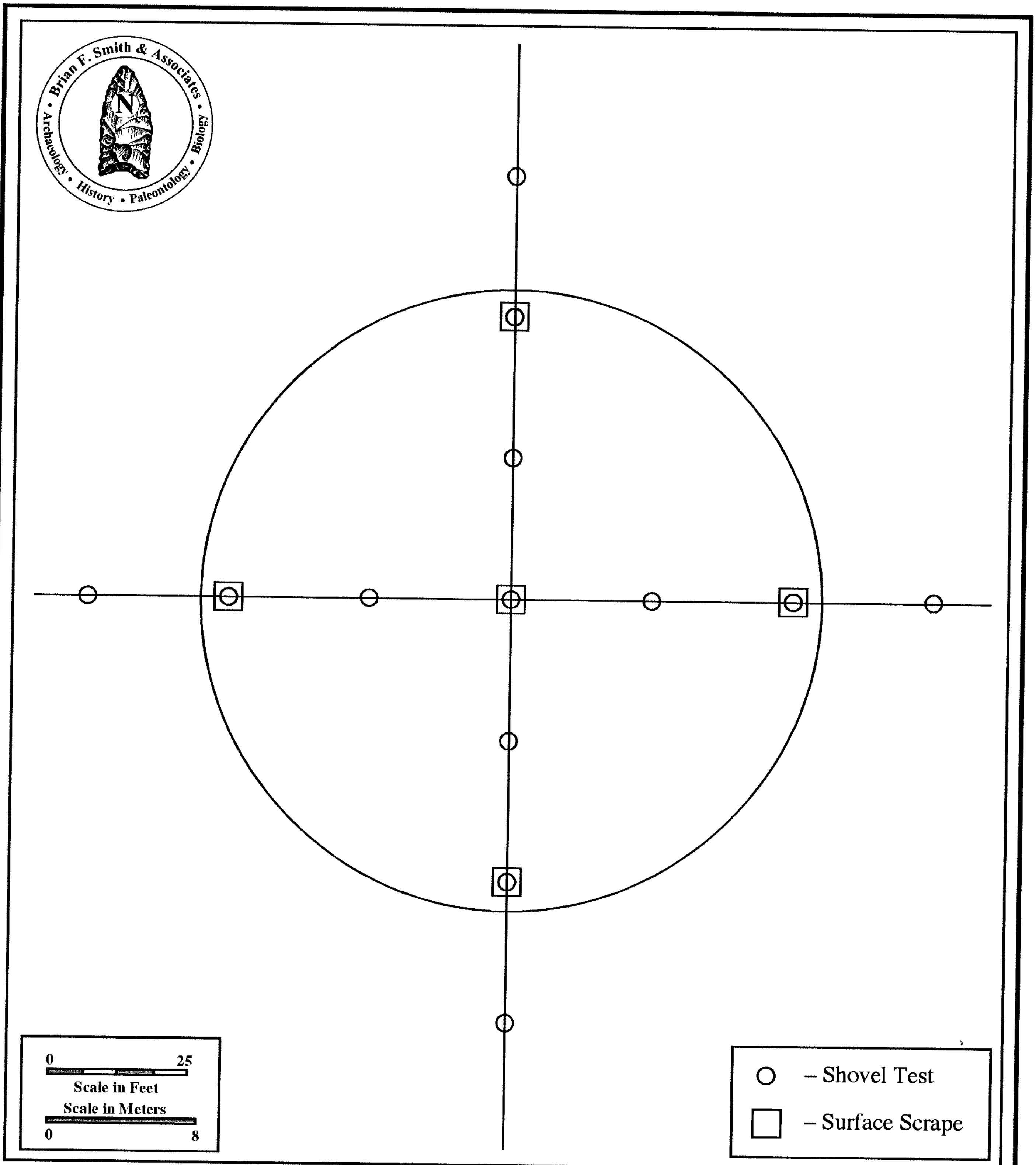


Figure 5.0–1

Sampling Design For Shovel Test and Surface Scrape Placement

The Otay Business Park Project

All excavations conducted were mapped using GPS. The collected artifacts were bagged, labeled, and returned to the laboratory of BFSA for further analysis. As per San Diego County requirements, a Native American representative was present during the field testing program.

The following table (Table 5.0–1) lists the 13 cultural resources located within the project boundaries that were subjected to a Phase II testing program to determine their significance and research potential, as well a testing program of an adjacent site to determine if any evidence of the site existed within project boundaries. The table includes recommendations for the scope of testing data required to determine significance based on the area of the site, the concentration of artifacts observed, and the degree of ground visibility. The testing program for the project was submitted and approved by the County prior to initiation of fieldwork.

Table 5.0–1
Proposed Testing Procedures

Sites (m^2)	Shovel Test Pits	Surface Collection	Test Units (dependent on Shovel Tests)	Surface Scrapes
SDI-8081**	30-40	Yes	1	5
SDI-8074 (8344 m^2)	10-15*	Yes	N/A (Shovel tests indicate no subsurface deposit)	4-6
SDI-8075 (7853 m^2)	10-15*	Yes	N/A (Shovel tests indicate no subsurface deposit)	4-6
SDI-8077, including extension (10, 845 m^2)	10-15*	Yes	1	4-6
SDI-8078 (12,970 m^2)	10-15*	Yes	N/A (Shovel tests indicate no subsurface deposit)	4-6
SDI-11,798 (13,731 m^2)	10-15*	Yes	N/A (Shovel tests indicate no subsurface deposit)	4-6
SDI-11,799/H (12,263 m^2)	15-20*	Yes	N/A (Shovel tests indicate no subsurface deposit)	N/A (Good ground visibility)
SDI-12,888H^{+}	4	Yes	N/A (Shovel tests indicate no subsurface deposit)	1
SDI-17,962 (388 m^2)	5	Yes	N/A (Shovel tests indicate no subsurface deposit)	2
SDI-17,963 (13,637 m^2)	10-15*	Yes	2	5-8

Sites (m^2)	Shovel Test Pits	Surface Collection	Test Units (dependent on Shovel Tests)	Surface Scrapes
SDI-17,964 (3,241m^2)	10-15*	Yes	2	N/A (Good ground visibility)
SDI-17,965 (35 m^2)	5	Yes	1	2
SDI-17,966 (641 m^2)	8	Yes	1	2
SDI-17,967 (3,526 m^2)	10-15*	Yes	2	N/A (Adequate ground visibility)

**Dependent on the initial shovel test results.*
***Only portion of site within impact area was tested*
+Only northern periphery of site was tested

5.2 Laboratory Methodology

In keeping with generally accepted archaeological procedures, the artifacts and ecofacts collected during the investigations were categorized as to artifact form, mineralogy, and function. Comparative collections curated in the laboratory of BFSA are often helpful in identifying unusual or highly fragmentary specimens. The cataloging process for the recovered specimens utilized a classification system commonly employed in this region. After cataloging and identification, the collections were marked with the appropriate provenience and catalog information, then packaged for permanent curation. No radiocarbon dating or other specialized studies were conducted as part of this project due to a lack of appropriate material.

A copy of this report will be permanently filed with SCIC at SDSU. All project field notes, photographs, and other paperwork associated with our involvement in this project will be housed at the offices of BFSA in Poway, California. Per County requirements, all artifacts collected will be curated at the San Diego Archaeological Center (SDAC) upon completion of the project, along with a copy of all notes, photographs, and this report.

5.3 Native American Consultation

In addition to the archaeological record searches, BFSA requested a review of the Sacred Lands File from the Native American Heritage Commission (NAHC) in Sacramento, California. In accordance with San Diego County guidelines, specifically Section 4.2 of San Diego County's *Draft CEQA Process Guidance for Cultural Resources, Land Use and Environment Group* (revised July 27, 2006), a representative of local Native American groups was present during the fieldwork. A representative of the Kumeyaay Nation, Clinton Linton, participated in the fieldwork program (see Appendix V).

6.0 REPORT OF FINDINGS

The archaeological survey conducted for the Otay Business Park Project and the off-site improvements resulted in the relocation of eight of the 11 previously recorded sites (or portions of), and the discovery of six isolated artifacts and six newly recorded sites (Figure 6.0–1). The eight relocated sites included SDI-8075, SDI-8077, SDI-8078, SDI-8080, SDI-8081, SDI-8082, SDI-8079, and SDI-11,799/H. No surface evidence of Sites SDI-8074, SDI-8076, or SDI-11,798 could be found during the field reconnaissance. These previously recorded sites, along with the results of the records searches, are discussed in the following section (Section 6.1).

The survey also resulted in the discovery of 12 unrecorded resources: six isolates (P-37-027656 through 027661) and six new sites (SDI-17,962, SDI-17,963, SDI-17,964, SDI-17,965, SDI-17,966/H, and SDI-17,967). For the proposed development to proceed, a testing program was implemented to determine whether any of the untested previously recorded, or newly recorded resources were significant according to San Diego County and CEQA criteria. Thirteen of these 23 resources were subjected to a testing and significance evaluation program (SDI-17,962, SDI-17,963, SDI-17,964, SDI-17,965, SDI-17,966/H, SDI-17,967, SDI-8074, SDI-8075, SDI-8077, SDI-8078, SDI-8081, SDI-11,798, and SDI-11,799/H). The six isolates consisted of three flakes, two cores, and one hammerstone/core, all made from felsite. As each of these items was found in individual, unassociated contexts, none are considered significant and no further study was required. No surface evidence of Sites SDI-8074 or SDI-11,798 was observed during the field survey, possibly as a result of very poor ground visibility. Sites SDI-8074and SDI-11,798 were added to the current testing program to verify their location and determine their significance. Only portions of Site SDI-8081 located within, or adjacent to, the proposed off-site improvement areas were tested to verify location and determine significance. In addition, one historic site (SDI-12,888H) was located in close proximity to the off-site improvements area, and the northern periphery of this site was subjected to subsurface testing to determine if any elements of this site existed within the impact area. Sites SDI-8076, SDI-8079, SDI-8080, and SDI-8082 have been previously tested and found to be not significant.

The majority of the prehistoric sites are characterized as short-term use resource extraction/processing sites exhibiting moderately disturbed contexts. The subsequent sections (6.2 through 6.15) describe the testing and evaluation of these cultural resources, including details of the artifact recovery from excavations. An evaluation of the significance of these sites is presented in Section 8.0. Generally, all of the sites within the project area exhibited cultural material within the topsoil. Anywhere from ten to 40 centimeters below the surface, depending on erosion and depositional processes, either a very compact clay, or clay/decomposed granite (DG) conglomerate, or very compact calcitic decomposed sandstone was encountered. This subsoil level was determined to be sterile of cultural material (see SDI-17,963 TU 2, SDI-17,964 TU 1, and SDI-8077 TU 1). The evaluations of the cultural resources within the Otay Business Park are presented in Sections 6.2 – 6.15. Each section provides the details of the sampling program and the artifact recovery.

TABLE 6.0–1

Cultural Resources Located within the Otay Business Park Project

Previously Recorded Sites	Newly Recorded Sites
SDI-8074 (no surface evidence)	SDI-17,962
SDI-8075 (relocated)	SDI-17,963
SDI-8076 (no surface evidence)	SDI-17,964
SDI-8077 (relocated)	SDI-17,965
SDI-8078 (relocated)	SDI-17,966
SDI-8079 (relocated)	SDI-17,967
SDI-8080 (relocated)	P-37-027656
SDI-8082 (relocated)	P-37-027657
SDI-11,798 (no surface evidence)	P-37-027658
SDI-11,799/H (relocated)	P-37-027659
SDI-8081 (relocated)*	P-37-027660
	P-37-027661

located partially in off-site improvement area; only a portion was tested

Figure 6.0–1
Cultural Resource Location Map

(Deleted for Public Review; Bound Separately)

6.1 Records Search Results

As part of the current study, BFSA conducted archaeological record searches at the South Coastal Information Center (SCIC) at San Diego State University (SDSU) and the San Diego Museum of Man. The records searches showed that the project area has been subjected to a number of cultural resource studies related to environmental impact studies (Table 6.1–1). The records indicate that four cultural resource studies and one draft Environmental Impact Report (EIR) have been conducted within portions of the project area. The project area has been previously surveyed in its entirety for a proposed border crossing (Carrico 1974) and a sludge management facility (Robbins-Wade and Gross 1990). An additional survey covered a very small portion of the project area (Kyle 2001). A portion of the project area was also covered in an EIR for a proposed racetrack (TMI Environmental Services 1990). Two of the sites within the project area, previously listed as one site (SDI-8076/8079) were investigated for a National Register Significance Evaluation associated with a U. S. Army Corps of Engineers Border Patrol Lights Project (McDonald et al. 1998). In addition to the projects listed above, 30 cultural resource studies have been conducted within a one-mile radius of the project area. For specific information about these projects, see the complete records search results provided in Appendix II.

The results of these records searches also showed that a total of nine cultural resources have been recorded within the Otay Business Park Project boundaries (Table 6.1–2). In addition, 73 resources, including 54 sites and 19 isolates, have been recorded within a one-mile radius of the project area (Table 6.1–3). Two of these sites have been recorded along the west border (Alta Road) of the project area (SDI-8081 & SDI-12,888H). However, the original mapped location of SDI-8081 places the site outside of the project area (Robbins-Wade and Gross 1990) and the current survey showed that SDI-12,888H is located completely outside of the project boundaries. Although these sites are located outside of the proposed 161.6-acre subdivision, they are located within portions of the 32.3-acres of off-site improvements to the west and northwest of the project area. Site SDI-12,888H could not be relocated during the survey of the off-site improvement areas. SDI-12,888H was determined to lie completely outside of the impact area associated with the proposed off-site road improvements. Site SDI-8081 contains a small, isolated shell midden partially located within portions of the off-site improvement area.

As is typical of Otay Mesa, most of the prehistoric sites listed in the record searches are characterized as lithic scatters, approximately 54.8% (N=40), ranging from only two artifacts to moderately dense scatters of lithic artifacts. In most cases, these sites were identified during surveys and have not been tested for significance; therefore, their subsurface characteristics are not known. Although a few of these sites have minimal subsurface deposits, the majority of these deposits are attributed to agricultural disturbances resulting in the downward turbation of artifacts. One prehistoric site is described as a habitation site (SDI-12,704), three appear to be temporary camps (SDI-513, SDI-11,999, and SDI-12,721), while others are quarry sites, milling stations, or marine shell scatters (Appendix II). Four sites are listed as historic (SDI-11,796H, SDI-11,802H, SDI-15,040, and SDI-17,433H), consisting of refuse scatters and historic features.

In addition to these 54 sites, approximately 19 isolated prehistoric artifacts have been recorded within one mile of the project (Table 6.1-4). Most of these consist of only one or two flakes or tested cobbles that are not associated with a concentration of artifacts; therefore, they were identified, mapped, and recorded with no further research being conducted. The large quantity of recorded isolates is a result of the intense use of the Otay Mesa area as a prehistoric raw material source. The complete results of the record searches are provided in Appendix II.

TABLE 6.1–1

Previous Studies Conducted within the Otay Business Park Project

Carrico, R. L.
1974 *Archaeological Survey of the Proposed Otay Mesa International Border Crossing.* WESTEC Services, Inc., San Diego. Report on file at South Coastal Information Center, San Diego State University.

Kyle, Carolyn
2001 *Cultural Resource Survey and Extended Phase I Testing Program for the Future State Route 11 and East Otay Mesa Port of Entry Project, San Diego, California.* Kyle Consulting, San Diego. Report submitted to Helix Environmental Planning, Inc. Report on file at South Coastal Information Center, San Diego State University.

McDonald, Meg and James D. Eighmey, Drew Pallette
1998 *National Register Significance Evaluation of Six Sites for the Border Lights Project on Otay Mesa, San Diego County, California.* Environmental Planning Section U. S. Army Corps of Engineers. Submitted to Environmental Planning Section U. S. Army Corps of Engineers. Contract No. DACA09-95-D-0013. Unpublished report on file at South Coastal Information Center, San Diego State University.

Robbins-Wade, M., and G. T. Gross
1990 *Historic Properties Inventory for the Southeast Otay Mesa Sludge Processing Facilities and Pipeline (From Southern Sludge Processing Facility to Southeast Otay Mesa Sludge Processing Facility), San Diego, California*. (DEP No. 89-0744). Affinis, El Cajon. Report on file at South Coastal Information Center, San Diego State University.

TMI Environmental Services
1990 *Draft Supplemental Environmental Impact Report for American International Raceway.* TMI Environmental Services. Submitted to American International Raceway, Inc. Contract No. P85-015WI Log No. 84-19-13. Unpublished Report on file at South Coastal Information Center, San Diego State University.

TABLE 6.1–2

Previously Recorded Resources Located within the Otay Business Park Project

Site Number	Previous Site Descriptions	Survey Results	Previously Tested? (Results)
CA-SDI-8074	Recorded as lithic scatter and possible hearths	The site was not re-located during the field survey. However, ground visibility was very poor: ≈ 0-20%.	Not tested
CA-SDI-8075	Sparse lithic scatter	Three lithic production waste artifacts located in western portion of site. However, ground visibility was very poor: ≈ 0-20%.	Not tested
CA-SDI-8076/8079	Habitation site with lithic scatter	SDI-8076: The site was not re-located during the field survey. Previous surface collections and U.S. Border Patrol disturbances may have depleted the surface expression. SDI-8079: Located a moderate lithic scatter within the southwest portion of the site. The remainder of the site has very poor ground visibility: ≈ 0-20%.	Tested (not significant according to Russell et al. 2002)
CA-SDI-8077	Sparse lithic scatter	The site extends approximately 100 meters south from its original boundary along the top of the mesa-ridge until it encounters mima mounds.	Not tested
CA-SDI-8078	Lithic scatter of tools, flakes, possible deposit	Four lithic production waste artifacts located along a dirt road within the previously recorded site boundaries. However, off-road ground visibility was very poor: ≈ 0-20%.	Not tested
CA-SDI-8080	Large, extensive lithic scatter	Twelve lithic production waste artifacts and one domed scraper located within the previously recorded site boundaries. However, ground visibility was very poor: ≈ 0-20%.	Tested (not significant according to Russell et al. 2002)
CA-SDI-8081*	Large, extensive lithic scatter/habitation site	Small shell midden deposit located adjacent to a proposed off-site road. Other isolated surface manifestations found.	Not Tested

Site Number	**Previous Site Descriptions**	**Survey Results**	**Previously Tested? (Results)**
CA-SDI-8082	Lithic scatter	One lithic production waste artifact located within the previously recorded site boundaries. However, ground visibility was very poor: ≈ 0-20%.	Tested (not significant according to Russell et al. 2002)
CA-SDI-11,798	sparse lithic scatter	The site was not re-located during the field survey. However, ground visibility was very poor: ≈ 0-20%.	Not tested
CA-SDI-11,799/H	Historic site consists of a cistern and surface artifacts	The cistern was re-located as a slight depression in the ground filled in with gravel. However, it is possible that the cistern is in actuality a leach field. The remainder of the site includes a very sparse shell, lithic, and historic trash scatter. Ground visibility was moderate to good: ≈ 50-75%.	Not tested
CA-SDI-12,888H+	Historic trash scatter	The site was not re-located during the field survey; ground visibility was very poor: ≈ 0-20%. Site was determined to lie completely outside of impact area.	Not Tested

* *Located partially within area of off-site improvements. Only portion of site affected by proposed road alignment to be evaluated.*

\+ *Falls outside of the off-site improvements area. Only the periphery of the site was tested.*

TABLE 6.1–3

Archaeological Sites Located within One Mile of the Otay Business Park Project (outside of current project boundaries)

Sites	Description
SDI-7215, SDI-8081, SDI-8652, SDI-8653, SDI-10,067, SDI-10,080, SDI-10,082, SDI-10,297, SDI-10,298, SDI-10,299, SDI-11,397, SDI-11,793, SDI-11,794, SDI-11,795,SDI-11,800, SDI-12,256, SDI-12,701, SDI-12,702, SDI-12,705, SDI-12,703, SDI-12,707, SDI-12,878, SDI-12,879, SDI-12,880, SDI-12,881, SDI-12,882, SDI-12,883, SDI-12,884, SDI-12,885, SDI-12,886, SDI-12,887, SDI-13,224, SDI-14,726, SDI-14,727, SDI-15,041, SDI-15,872, SDI-15,873, SDI-15,874, SDI-15,875, SDI-17,431, SDI-12,877	Lithic scatters
SDI-12,721	Temporary camps (groundstone, bedrock milling, and lithic scatter)
SDI-12,704	Prehistoric habitation site (bedrock milling, groundstone, lithic scatter)
SDI-13,225, SDI-15,871	Bedrock milling stations
SDI-12,862, SDI-11,801	Prehistoric shell scatter
SDI-16,788	Quarry sites with lithic scatters
SDI-11,796H	Historic windmill/well and refuse scatter
SDI-11,802H, SDI-15,040	Historic refuse scatter
SDI-17,433H	Historic cobble feature
SDI-2888	Information missing from SCIC
SDI-10,081	Information missing from SCIC and no evidence of site at recorded location
I-503, I-504, I-505, I-506, I-507, I-509, I-510, I-512, I-514, I-515, I-516, I-632, I-669, I-670, I-672, I-673, I-674, P-37-013722, P-37-013723	Prehistoric isolates

TABLE 6.1–4

Newly Recorded Resources within the Otay Business Park Project

Resource designation*	Survey Results	Testing Required?
Isolate (P-37-027656)	One felsite flake	No
Isolate (P-37-027657)	One felsite hammerstone/core	No
Isolate (P-37-027658)	One felsite core	No
Isolate (P-37-027659)	One felsite flake	No
Isolate (P-37-027660)	One felsite flake	No
Isolate (P-37-027661)	One felsite core	No
SDI-17,962	This site is located south of SDI-8080, east of SDI-8057, and north of SDI-8082 and includes approximately 15 flakes and one scraper, mostly felsite and some basalt. Circular orientation, approximately 30 meters across and is located within and a round a dirt road near the eastern boundary of the project area. Off-road ground visibility is poor: ≈ 0-20%.	Yes
SDI-17,963	This site is located along the northeastern toe of a mesa-ridge extending east towards an intermittent stream and includes a light to moderate lithic scatter including flakes, cores, debitage, percussion tools, and precision tools. The site is just east of SDI-8077 and west of SDI-8057. It extends approximately 220 meters north/south and 100 meters east/west. Off-road ground visibility is poor: ≈ 0-20%.	Yes
SDI-17,964	This site is located just north of where SDI-8076 was previously recorded and south of SDI-8077. It is approximately 100 meters north of the international boundary and is mostly located along the southeast edge of a mesa-ridge and spills down-slope slightly. The site is located over a spread of exposed cobbles and was most likely a lithic procurement site. Artifacts include flakes, debitage, percussion tools, precision tools, and cores. Ground visibility is moderate to good: ≈ 50-75%.	Yes

Resource designation*	Survey Results	Testing Required?
SDI-17,965	This site includes a small marine shell scatter and darkened midden soils in a small, centralized area. The site is circular and measures approximately 5 meters across. Ground visibility around the site is very poor: ≈ 0-10%	Yes
SDI-17,966/H	This site includes a light lithic and marine shell scatter and is located in the western portion of the project area south of SDI-11,799/H and north of SDI-11,798. Also contains historic artifact scatter. Ground visibility within the site is poor to moderate: ≈ 0-40%.	Yes
SDI-17,967	This site is located to the east and down-slope of Temp 5 in the southern portion of the project area approximately 100 meters north of the international boundary. Artifacts include a moderate lithic scatter consisting of flakes, debitage, cores, percussion tools, and precision tools. Ground visibility was moderate: ≈ 50%.	Yes

**Missing resource designation numbers have been incorporated into previously recorded sites.*

6.2 Site SDI-17,962

6.2.1 Site Description

Site SDI-17,962 is a prehistoric limited-use site located in a relatively level area within the eastern portion of the project area (Figure 6.0–1). The site was identified during the current survey and subsequently tested for significance. Elevation at the site is approximately 520 feet AMSL. Disturbances in the area include disking activities associated with past agricultural practices and a graded dirt road oriented east/west through the center of the site. Off-road enthusiasts and United State Border Patrol frequent this road. Some degree of erosion has also occurred in the area. The majority of the artifacts observed were within the boundaries of the dirt road that bisects the site. Vegetation in the site area consists of dense, tall grasses, resulting in very poor ground visibility. No bedrock outcrops, features, or darkened soils were observed. The general configuration of the resource is shown in Figure 6.2–1. The setting of the site is shown in Plate 6.2–1. Testing of Site SDI-17,962 consisted of collection and mapping of all surface artifacts and the excavation of two surface scrapes (SS) and five shovel test pits (STP).

6.2.2 Description of Field Investigations

Field investigations at Site SDI-17,962 were conducted using the standard methodologies described in Section 5.0. A total of 14 artifacts were recovered during the current investigation. A summary of total artifact recovery from the site is presented in Table 6.2–1, while detailed provenience information is provided in the artifact catalog (Appendix IV).

Surface Recordation

Off-road portions of the site surface were covered with dense, tall grasses; consequently, surface visibility was poor across these areas. To compensate for poor ground visibility, two surface scrapes were placed on either side of the dirt road (Figure 6.2–1). All artifacts observed on the surface of the site were mapped using a handheld GPS unit and collected, the locations of which are illustrated in Figure 6.2–1. The surface artifacts were widely scattered throughout the site area. The surface collection, summarized in Table 6.2–1 and detailed in Table 6.2–2, consisted of 12 artifacts. The surface expression of the site measured approximately 42 meters (138 feet) east/west by 26 meters (84 feet) north/south covering approximately 936 square meters (10,074 square feet). The assemblage included two precision tools, one percussion tool, and nine pieces of lithic production waste. The shovel scrapes resulted in the recovery of two MGM flakes from SS 2, which are summarized in Table 6.2–1 and detailed in Table 6.2–3.

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-17,962 was investigated through the excavation of a total of five STPs. Shovel test pits were excavated across the entire site, and were placed according to the locations of the surface artifacts. The locations of the STPs are illustrated in Figure 6.2–1. All shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters, unless a culturally sterile level or bedrock was encountered.

None of the five STPs excavated at Site SDI-17,962 were positive for cultural material (Table 6.2–1).

6.2.3 Laboratory Analysis

Laboratory analysis for Site SDI-17,962 included the standard procedures described in Section 5.0 of this report. All artifacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-17,962 included a total of 14 lithic artifacts, summarized in Table 6.2–1 and detailed in Appendix IV.

Lithic Artifact Analysis

Lithic production waste accounted for the largest category of lithic artifacts, representing 78.57% (N=11) of the lithic artifact collection, including flakes made from locally available medium-grained metavolcanic material (N=9) and fine-grained metavolcanic material (N=2). The remaining lithic collection consisted of one expedient tool (7.14%), one percussion tool (7.14%), and one precision tool (7.14%) (Table 6.2-1).

Medium-grained metavolcanic material accounted for the largest category of lithic material, representing 85.71% (N=12) of the total assemblage. The remaining two artifacts (two flakes) were manufactured from fine-grained metavolcanic material, representing 14.29% of the total assemblage. A summary of all lithic artifacts by material is provided in Table 6.2–4. Detailed material type and tool measurement data can be found in the artifact catalog (Appendix IV). Activities indicated by the artifacts recovered from the site include a limited amount of lithic tool production and maintenance.

6.2.4 Discussion

The current testing program demonstrated that Site SDI-17,962 consists of a sparse surface scatter of artifacts with no associated subsurface deposit. The overall site dimensions, as identified by the surface distribution of artifacts, measured approximately 42 meters (138 feet) east/west by 26 meters (84 feet) north/south covering approximately 936 square meters (10,074 square feet). The surface scatter, which has been collected and analyzed, was widely scattered across the site. Shovel test excavations indicate that no subsurface deposits are located at Site SDI-17,962. The artifacts collected were manufactured from locally available fine- and medium-grained metavolcanic materials. Based on the sparse nature of the surface scatter and the limited variety and quantity of material recovered from the site, the site exhibits no additional research potential.

The site is interpreted as a limited-use area where activities included tool manufacture and maintenance. The limited quantity and range of lithic material suggests a limited use of the site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. The research potential of the site has been exhausted through the current testing program.

6.2.5 Summary

Analysis of cultural materials recovered from Site SDI-17,962 revealed a sparse surface scatter of artifacts with no associated subsurface deposit. The recovered materials indicate that site activities were focused on lithic tool manufacture and maintenance.

Although no subsurface deposit was identified at SDI-17,962 and the site does not possess additional research potential, the surface expression of the site did yield information during the testing program. Therefore, based on the information derived from the current testing program, Site SDI-17,962 is considered a significant resource according to criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007).

Plate 6.2–1 Overview of Site SDI-17,962, looking east.

<u>Figure 6.2–1</u>

Excavation Location Map — Site SDI-17,962

(Deleted for Public Review; Bound Separately)

TABLE 6.2–1
Artifact Summary, Site SDI-17,962

Recovery Category	Surface	Surface Scrape	Shovel Test	Total	Percent*
Expedient Tools:					
Utilized Debitage	1	-	-	1	7.14
Lithic Production Waste:					
Flake(s)	9	2	-	11	78.57
Percussion Tools:					
Hammerstone(s)	1		-	1	7.14
Precision Tools:					
Scraper(s)	1	-	-	1	7.14
Total:	12	2	0	14	99.99
Percent:	85.71	14.29		100.00	

**Rounded numbers may not total 100%*

TABLE 6.2–2
Surface Recovery, Site SDI-17,962

Surface Collection	Quantity	Artifact Type	Material Type	Catalog #
1	1	Scraper	Medium-grained Metavolcanic	1
2	1	Flake	Fine-grained Metavolcanic	2
2	1	Utilized Debitage	Medium-grained Metavolcanic	3
4	1	Flake	Medium-grained Metavolcanic	4
6	2	Flake	Medium-grained Metavolcanic	5
8	1	Flake	Fine-grained Metavolcanic	6
9	1	Flake	Medium-grained Metavolcanic	7
10	1	Flake	Medium-grained Metavolcanic	8
11	1	Flake	Medium-grained Metavolcanic	9
12	1	Hammerstone	Medium-grained Metavolcanic	10
13	1	Flake	Medium-grained Metavolcanic	11

TABLE 6.2–3

Surface Scrape Recovery, Site SDI-17,962

Surface Scrape	Quantity	Artifact Type	Material Type	Catalog #
2	2	Flake(s)	Medium-grained Metavolcanic	13
4	No Recovery			15

TABLE 6.2–4

Lithic Material Analysis, Site SDI-17,962

Recovery Category	Fine-grained metavolcanic	Medium-grained metavolcanic	Total	Percent
Expedient Tools				
Utilized Debitage		1	1	7.14
Lithic Production Waste				
Flake(s)	2	9	11	78.57
Percussion Tools				
Hammerstone(s)		1	1	7.14
Precision Tools				
Scraper(s)		1	1	7.14
Total:	2	12	14	99.99
Percent:	14.29	85.71	100.00	

**Rounded numbers may not total 100%*

6.3 Site SDI-17,963

6.3.1 Site Description

Site SDI-17,963 is a resource extraction and processing site located down-slope and just east of Site SDI-8077, along the west bank of an intermittent drainage within the central portion of the project area (Figure 6.0–1). The site was identified during the current survey and subsequently tested for significance. The site elevation is approximately 500 feet AMSL. Disturbances in the area include agricultural disking, as well as the grading of two dirt roads – one that runs north/south along the east edge of the site, and another that runs east/west through the center of the site. Minimal evidence of erosion was observed. Ground visibility within the roads was excellent; however, beyond the graded roads, ground visibility was very poor due to dense vegetation of tall grasses and weeds. No bedrock outcrops, features, or darkened soils were observed. The general configuration of the resource is shown in Figure 6.3–1. The setting of the site is shown in Plates 6.3–1 and 6.3–2. Testing of Site SDI-17,963 consisted of the collection and mapping of all surface artifacts and the excavation of six surface scrapes, 18 shovel test pits, and two test units.

6.3.2 Description of Field Investigations

Field investigations at Site SDI-17,963 were conducted using the standard methodologies described in Section 5.0. A total of 522 artifacts were recovered during the current investigation. A summary of artifact recovery from the site is presented in Table 6.3–1, while detailed provenience information in provided in the artifact catalog (Appendix IV).

<u>Surface Recordation</u>

The entire surface of the site was inspected for artifacts and features. All surface artifacts were mapped using a handheld GPS unit (Figure 6.3–1). The majority of the site surface was covered with dense, tall grasses; consequently, surface visibility was poor across most of the area except for the dirt roads. To account for poor ground visibility, six surface scrapes were placed throughout the site based on the location of surface artifacts and the sampling design discussed in Section 5.0. The locations of these surface scrapes are illustrated in Figure 6.3–1.

All artifacts observed on the surface of the site were mapped and collected, the locations of which are illustrated in Figure 6.3–1. The surface artifacts were concentrated within the central portion of the site, in and around the east/west oriented dirt road. The surface collection, summarized in Table 6.3–1 and detailed in Table 6.3–2, consisted of 120 artifacts. The surface scrapes, summarized in Table 6.3–1 and detailed in Table 6.3–3, yielded only four artifacts. The surface expression of the site measured approximately 59 meters (194 feet) east/west by 149 meters (449 feet) north/south covering approximately 7,206 square meters (77,565 square feet). The total surface assemblage included four expedient tools, one groundstone tool, 110 lithic production waste, one percussion tool, and nine precision tools.

<u>*Subsurface Excavation*</u>

The potential for subsurface cultural deposits at Site SDI-17,963 was investigated through the excavation of a total of 18 STPs. Shovel test pits were excavated across the entire site, and were placed according to the locations of the surface artifacts. The locations of the STPs are shown in Figure 6.3–1. All shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters, unless a culturally sterile level or bedrock was encountered. Thirteen of the 18 STPs excavated at Site SDI-17,963 were positive for cultural material (STPs 1, 2, 3, 6, 7, 8, 10, 12, 14, 15, 16, 17, and 18). A summary of the artifact recovery from STPs at Site SDI-17,963 is presented in Table 6.3–1, and detailed excavation data is provided in Table 6.3–4.

Subsurface testing of Site SDI-17,963 continued with the excavation of two standard one-by-one meter test units. The test units were positioned to sample the areas of greatest potential to produce subsurface deposits, as identified by the STPs and surface collections. Test Unit 1 (TU 1) was placed in the central portion of the site, near STP 1. Test Unit 2 (TU 2) was placed in the central portion of the site, near STP 3. A summary of artifact recovery from the test units is provided in Table 6.3–1, and the locations of the test units are illustrated in Figure 6.3–1.

The test units were excavated in standard decimeter levels to subsoil, and all removed soils were sifted through one-eighth-inch mesh hardware cloth. Recovery from TU 1 consisted of 140 lithic artifacts; 137 pieces of lithic production waste, two expedient tool(s), and one groundstone tool. Cultural material was recovered to a maximum depth of 25 centimeters in TU 1, where hard clay/decomposed granite (DG) was encountered. The test unit recovery from TU 1 is detailed in Table 6.3–5 and summarized by depth in Table 6.3–6.

The soil from TU 1 was characterized as a moderately compact, dark grayish brown (10YR 4/2) loam to a depth of approximately 25 centimeters, overlying a very compact, grayish brown (10YR 5/2) clay loam subsoil with large cobble/DG inclusions to the maximum depth of the unit at 30 centimeters. The north wall of TU 1 is illustrated in Figure 6.3–2 and pictured in Plate 6.3–3.

Recovery from TU 2 consisted of 223 lithic artifacts; 220 pieces of lithic production waste, four precision tool(s), and three expedient tool(s). Cultural material was recovered to a maximum depth of 42 centimeters in TU 2, where hard clay/decomposed granite (DG) was encountered. The test unit recovery from TU 2 is detailed in Table 6.3–5 and summarized by depth in Table 6.3–7.

The soil from TU 2 was characterized as a moderately compact dark grayish brown (10YR 4/2) loam to a depth of approximately 42 centimeters, overlying a very compact, grayish brown (10YR 5/2) clay loam subsoil with large cobble/DG inclusions to the maximum depth of the unit at 60 centimeters. The north wall of TU 2 is illustrated in Figure 6.3–3 and pictured in Plate 6.3–4.

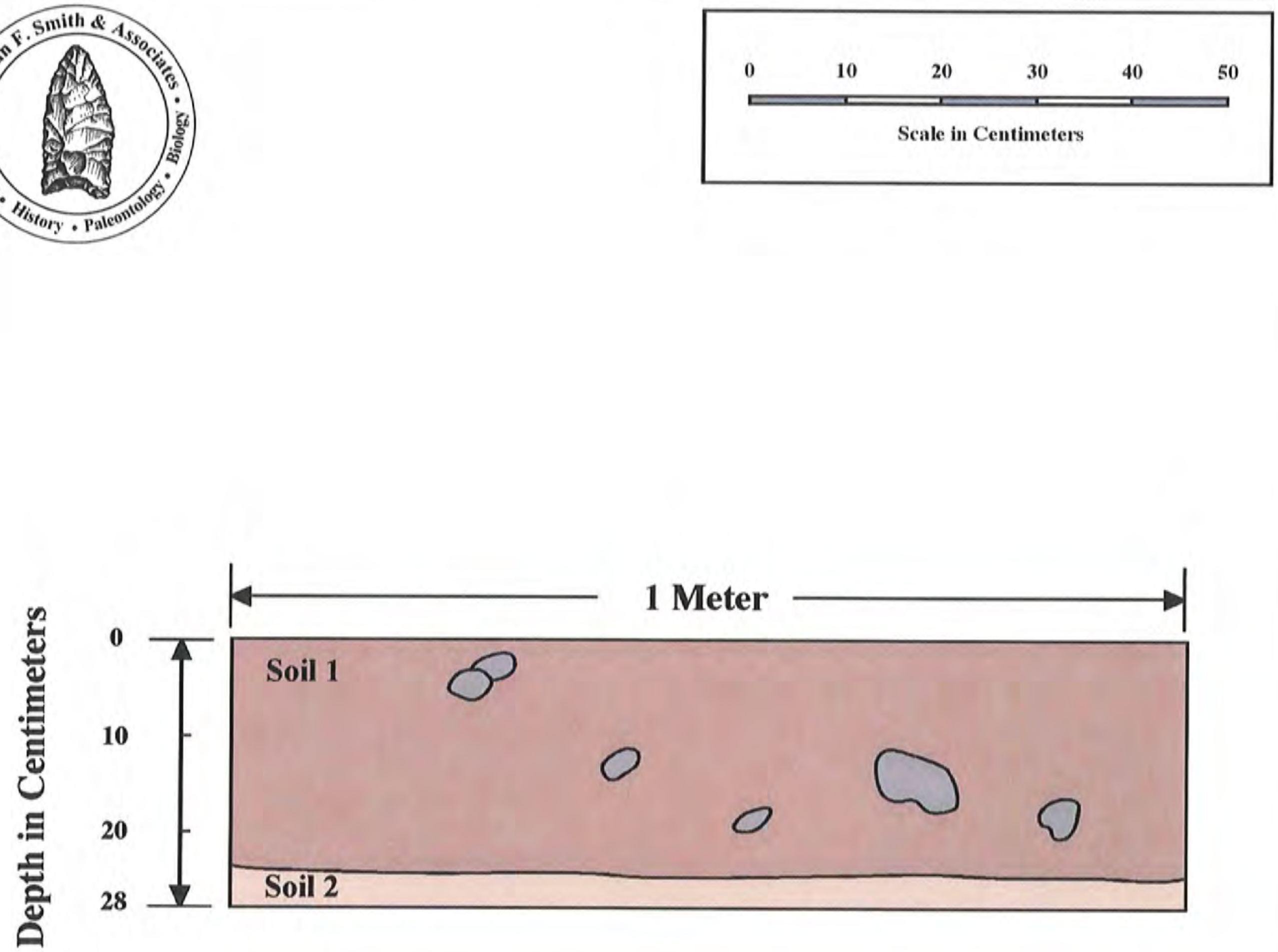
Plate 6.3–1 Overview of Site SDI-17,963, facing northwest.

Plate 6.3–2 Overview of Site SDI-17,963, facing west.

Figure 6.3–1

Excavation Location Map — Site SDI-17,963

(Deleted for Public Review; Bound Separately)



Soil Types

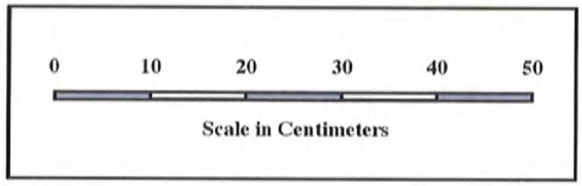
1 Dark grayish brown (10YR 4/2) moderately compact to very compact loam

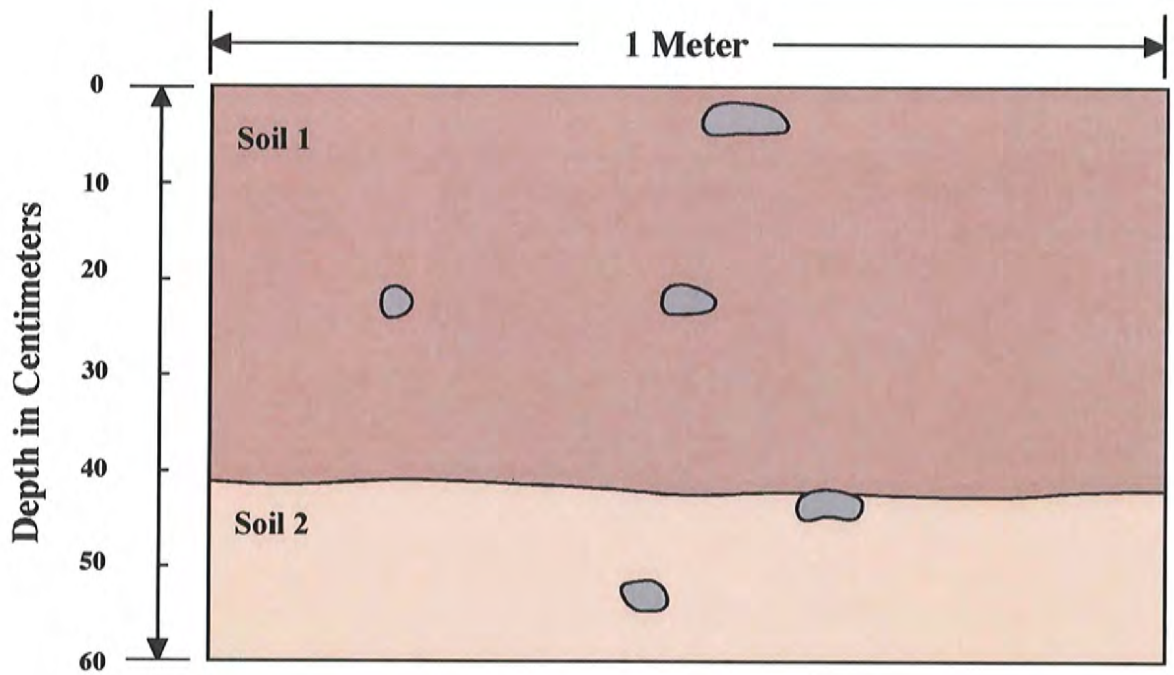
2 Grayish brown (10YR 5/2) very compact clay loam

– Cobble

Figure 6.3–2
North Wall Profile of Test Unit 1
Site SDI-17,963

The Otay Business Park Project





Soil Types

1	Dark grayish brown (10YR 4/2) moderately compact to very compact loam
2	Grayish brown (10YR 5/2) very compact clay loam

– Cobble

Figure 6.3–3
North Wall Profile of Test Unit 2
Site SDI-17,963

The Otay Business Park Project

Plate 6.3–3 Test Unit 1 North Wall, Site SDI-17,963.

Plate 6.3–4 Test Unit 2 North Wall, Site SDI-17,963.

The subsurface expression of the site, as identified by the subsurface tests that produced artifacts, was smaller than the surface expression. Although shovel test pits within the southern portion of the site were positive (STPs 16, 17, and 18), the subsurface boundary was placed between STPs 16 and 17 (Figure 6.3–1). The subsurface STP recovery steadily decrease southward to the point where the recovery of a few artifacts are most likely the result of agricultural disturbances and/or represent the common Otay Mesa background noise of artifacts. In addition, the location of the surface artifacts clearly coincides with the deeper and denser subsurface deposit as indicated by STPs 1, 2, 3, and 7 and Test Units 1 and 2. The subsurface deposit at Site SDI-17,963 covers approximately 2,952 square meters (9684 square feet).

6.3.3 Laboratory Analysis

Laboratory analysis for SDI-17,963 included the standard procedures described in Section 5.0 of this report. All artifacts and ecofacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-17,963, including 522 artifacts, is summarized in Table 6.3–1 and detailed in Appendix IV.

Lithic Artifact Analysis

Lithic production waste accounted for the largest category of lithic artifacts, representing 95.4% (N=498) of the lithic artifact collection, and included 477 flakes, 19 pieces of debitage, and two cores. The remaining lithic collection consisted of 13 precision tools (2.48%), nine expedient tools (1.72%), one groundstone tool (0.19%), and one percussion tool (0.19%). Activities indicated by the artifacts recovered from the site include procurement, processing, and maintenance of lithic tools.

The lithic artifact collection included a small range of material types, most of which are locally available. The majority of artifacts were made from local medium- and fine-grained metavolcanics, which made up 99.23% (N=518) of the total. The other materials represented were quartz (0.538%), granite (0.19%), and coarse-grained metavolcanic (0.19%). The lithic material distribution of the artifact assemblage is presented in Table 6.3–8.

6.3.4 Discussion

The testing demonstrated that Site SDI-17,963 consists of a moderate prehistoric surface artifact scatter and moderately deep subsurface deposit that yielded 186 artifacts. The overall site dimensions, as identified by the surface distribution of artifacts, measure approximately 59 meters (194 feet) east/west by 149 meters (449 feet) north/south covering approximately 7,206 square meters (77,565 square feet). The surface scatter, which has been collected and analyzed, was spread widely across the site. Test unit and shovel test excavations indicate that the subsurface deposits extend to a depth of 42 centimeters. Although there is little variety in the artifact types recovered and there was a complete absence of ecofacts, SDI-17,963 exhibited a deeper and denser artifact concentration than any other previously or newly recorded site within the project area. Therefore, the site does exhibit additional research potential.

The site is interpreted as lithic resource extraction, processing, and maintenance site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. However, the large quantity of lithic tools recovered suggests repeated use of the site; therefore, the site exhibits additional research potential.

6.3.5 Summary

The analysis of the prehistoric cultural materials recovered from Site SDI-17,963 revealed a significant cultural deposit at the site extending to a depth of 42 centimeters. The recovered lithic artifacts indicate that site activities were focused on the procurement, processing, and maintenance of lithic tools.

Site SDI-17,963 exhibits the potential for subsurface deposits and/or buried cultural features. Because the testing and evaluation program identified an intact subsurface deposit, the site has yielded information and is considered to have additional research potential. Based on the information derived from the current testing program, Site SDI-17,963 is considered a significant resource according to criteria listed in *County of San Diego Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; First Revision December 5, 2007).

TABLE 6.3–1
Artifact Summary, Site SDI-17,963

Recovery Category	Surface	Surface Scrape	Shovel Test	Test Units	Total	Percent
Expedient Tools:						
Utilized Debitage	1	-	-	-	1	0.19
Utilized Flake(s)	3	-	-	5	8	1.53
Groundstone Tools:						
Metate(s)	-	-	-	1	1	0.19
Lithic Production Waste:						
Core(s)	2	-	-	-	2	0.38
Debitage	6	-	1	12	19	3.64
Flake(s)	98	4	34	341	477	91.38
Percussion Tools:						
Hammerstone(s)	1	-	-	-	1	0.19
Precision Tools:						
Core Tool(s)	1	-	-	-	1	0.19
Flake Scraper(s)	2	-	-	1	3	0.57
Retouched Debitage	1	-	-	-	1	0.19
Retouched Flake(s)	-	-	-	2	2	0.38
Scraper(s)	5	-	-	1	6	1.15
Total:	120	4	35	363	522	99.98
Percent:	22.99	0.77	6.7	69.54	100.00	

**Rounded totals may not equal 100%*

TABLE 6.3–2
Surface Recovery, Site SDI-17,963

Surface	Quantity	Artifact Type	Material Type	Catalog #
2	1	Flake	Fine-grained Metavolcanic	1
3	1	Flake	Fine-grained Metavolcanic	2
4	1	Flake	Fine-grained Metavolcanic	3
5	1	Flake	Medium-grained Metavolcanic	4
6	1	Utilized Flake	Medium-grained Metavolcanic	5
7	1	Flake	Medium-grained Metavolcanic	6
8	1	Flake Scraper	Medium-grained Metavolcanic	7
9	1	Flake	Fine-grained Metavolcanic	8
9	1	Flake	Medium-grained Metavolcanic	9
10	1	Flake	Medium-grained Metavolcanic	10
10	1	Flake	Coarse-grained Metavolcanic	11
11	2	Flakes	Medium-grained Metavolcanic	12
13	1	Flake	Medium-grained Metavolcanic	13
14	1	Flake	Medium-grained Metavolcanic	14
15	2	Flakes	Medium-grained Metavolcanic	15
16	1	Flake	Medium-grained Metavolcanic	16
17	1	Flake	Fine-grained Metavolcanic	17
17	1	Hammerstone	Medium-grained Metavolcanic	18
17	6	Flakes	Medium-grained Metavolcanic	19
18	1	Flake	Medium-grained Metavolcanic	20
18	1	Debitage	Medium-grained Metavolcanic	21
19	1	Flake	Medium-grained Metavolcanic	22
22	1	Flake	Medium-grained Metavolcanic	23
23	1	Flake	Fine-grained Metavolcanic	24
23	2	Flakes	Medium-grained Metavolcanic	25
24	1	Utilized Flake	Fine-grained Metavolcanic	26
25	2	Flakes	Fine-grained Metavolcanic	27
27	1	Flake Scraper	Medium-grained Metavolcanic	28
27	1	Flake	Medium-grained Metavolcanic	29
29	5	Flakes	Medium-grained Metavolcanic	30

Surface	Quantity	Artifact Type	Material Type	Catalog #
30	1	Flake	Fine-grained Metavolcanic	31
31	3	Flakes	Medium-grained Metavolcanic	32
32	1	Flake	Fine-grained Metavolcanic	33
32	4	Flakes	Medium-grained Metavolcanic	34
33	1	Core	Medium-grained Metavolcanic	35
34	4	Flakes	Medium-grained Metavolcanic	36
35	1	Flake	Medium-grained Metavolcanic	37
36	1	Flake	Fine-grained Metavolcanic	38
36	1	Debitage	Medium-grained Metavolcanic	39
36	1	Flake	Medium-grained Metavolcanic	40
37	2	Debitage	Medium-grained Metavolcanic	41
38	1	Flake	Fine-grained Metavolcanic	42
39	1	Flake	Fine-grained Metavolcanic	43
39	1	Flake	Medium-grained Metavolcanic	44
40	1	Flake	Fine-grained Metavolcanic	45
40	2	Flakes	Medium-grained Metavolcanic	46
42	1	Scraper	Medium-grained Metavolcanic	47
43	1	Flake	Fine-grained Metavolcanic	48
43	1	Scraper	Medium-grained Metavolcanic	49
44	1	Flake	Medium-grained Metavolcanic	50
45	1	Flake	Fine-grained Metavolcanic	51
46	1	Flake	Medium-grained Metavolcanic	52
47	1	Flake	Fine-grained Metavolcanic	53
47	1	Flake	Medium-grained Metavolcanic	54
48	1	Flake	Medium-grained Metavolcanic	55
49	1	Flake	Medium-grained Metavolcanic	56
50	2	Flakes	Medium-grained Metavolcanic	57
51	2	Flakes	Fine-grained Metavolcanic	58
52	1	Core Tool	Fine-grained Metavolcanic	59
52	1	Flake	Fine-grained Metavolcanic	60
53	1	Core	Medium-grained Metavolcanic	61

Surface	Quantity	Artifact Type	Material Type	Catalog #
54	4	Flakes	Medium-grained Metavolcanic	62
55	1	Flake	Fine-grained Metavolcanic	63
55	2	Flakes	Medium-grained Metavolcanic	64
56	2	Flakes	Medium-grained Metavolcanic	65
57	1	Flake	Medium-grained Metavolcanic	66
58	2	Flakes	Fine-grained Metavolcanic	67
59	1	Flake	Medium-grained Metavolcanic	68
60	2	Flakes	Medium-grained Metavolcanic	69
61	2	Flakes	Medium-grained Metavolcanic	70
62	1	Debitage	Medium-grained Metavolcanic	71
62	1	Flake	Medium-grained Metavolcanic	72
63	1	Scraper	Medium-grained Metavolcanic	73
63	1	Retouched Debitage	Medium-grained Metavolcanic	74
64	1	Flake	Fine-grained Metavolcanic	75
65	1	Utilized Debitage	Fine-grained Metavolcanic	76
65	1	Utilized Flake	Medium-grained Metavolcanic	77
65	1	Flake	Medium-grained Metavolcanic	78
66	1	Flake	Fine-grained Metavolcanic	79
66	1	Flake	Medium-grained Metavolcanic	80
67	1	Scraper	Fine-grained Metavolcanic	81
67	1	Debitage	Medium-grained Metavolcanic	82
67	4	Flakes	Medium-grained Metavolcanic	83
68	1	Scraper	Medium-grained Metavolcanic	84

TABLE 6.3–3
Surface Scrape Recovery, Site SDI-17,963

Surface Scrape	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-4	1	Flake	Medium-grained Metavolcanic	85
3	0-4	1	Flake	Fine-grained Metavolcanic	86
3	0-4	1	Flake	Medium-grained Metavolcanic	87
6	0-4		No Recovery	No Recovery	91
8	0-4		No Recovery	No Recovery	93
13	0-4		No Recovery	No Recovery	98
11	0-4	1	Flake	Medium-grained Metavolcanic	102

TABLE 6.3–4
Shovel Test Excavations, Site SDI-17,963

<table>
<tr><th>Shovel Test</th><th>Depth (cm)</th><th>Quantity</th><th>Artifact Type</th><th>Material Type</th><th>Catalog #</th></tr>
<tr><td rowspan="5">1</td><td>0-10</td><td colspan="3">No Recovery</td><td>103</td></tr>
<tr><td>10-20</td><td>3</td><td>Flakes</td><td>Medium-grained metavolcanic</td><td>104</td></tr>
<tr><td>20-30</td><td>1</td><td>Flake</td><td>Fine-grained metavolcanic</td><td>105</td></tr>
<tr><td>20-30</td><td>2</td><td>Flakes</td><td>Medium-grained metavolcanic</td><td>106</td></tr>
<tr><td>30-40</td><td colspan="3">No Recovery</td><td>107</td></tr>
<tr><td rowspan="3">2</td><td>0-10</td><td>3</td><td>Flakes</td><td>Medium-grained metavolcanic</td><td>108</td></tr>
<tr><td>10-20</td><td>2</td><td>Flakes</td><td>Fine-grained metavolcanic</td><td>109</td></tr>
<tr><td>20-30</td><td colspan="3">No Recovery</td><td>110</td></tr>
<tr><td rowspan="5">3</td><td>0-10</td><td>1</td><td>Flake</td><td>Fine-grained metavolcanic</td><td>111</td></tr>
<tr><td>0-10</td><td>1</td><td>Flake</td><td>Medium-grained metavolcanic</td><td>112</td></tr>
<tr><td>10-20</td><td>1</td><td>Flake</td><td>Fine-grained metavolcanic</td><td>113</td></tr>
<tr><td>20-30</td><td>1</td><td>Flake</td><td>Fine-grained metavolcanic</td><td>114</td></tr>
<tr><td>30-40</td><td colspan="3">No Recovery</td><td>115</td></tr>
<tr><td rowspan="3">4</td><td>0-10</td><td colspan="3" rowspan="3">No Recovery</td><td>116</td></tr>
<tr><td>10-20</td><td>117</td></tr>
<tr><td>20-30</td><td>118</td></tr>
<tr><td>5</td><td>0-10</td><td colspan="3">No Recovery</td><td>119</td></tr>
</table>

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
	10-20				120
	20-30				121
6	0-10	1	Flake	Medium-grained metavolcanic	122
	10-20	No Recovery			123
	20-30				124
7	0-10	1	Flake	Fine-grained metavolcanic	125
	0-10	1	Flake	Medium-grained metavolcanic	126
	10-20	1	Flake	Fine-grained metavolcanic	127
	10-20	1	Flake	Medium-grained metavolcanic	128
	20-30	No Recovery			129
8	0-10	No Recovery			130
	10-20				131
	20-30	1	Debitage	Medium-grained metavolcanic	132
9	0-10	No Recovery			133
	10-20	No Recovery			134
	20-30	No Recovery			135
10	0-10	No Recovery			136
	10-20	1	Flake	Fine-grained metavolcanic	137
	10-20	1	Flake	Medium-grained metavolcanic	138
	20-30	No Recovery			139
11	0-10	No Recovery			140
	10-20	No Recovery			141
	20-30	No Recovery			142
12	0-10	1	Flake	Medium-grained metavolcanic	143
	10-20	No Recovery			144
	20-30	No Recovery			145
13	0-10	No Recovery			146
	10-20	No Recovery			147
	20-30	No Recovery			148
14	0-10	No Recovery			149
	10-20	1	Flake	Medium-grained metavolcanic	150
	20-30	No Recovery			151
15	0-10	1	Flake	Medium-grained metavolcanic	152
	10-20	2	Flakes	Medium-grained metavolcanic	153
	20-30	1	Flake	Medium-grained metavolcanic	154
16	0-10	1	Flake	Fine-grained metavolcanic	155
	0-10	1	Flake	Medium-grained metavolcanic	156
	10-20	1	Flake	Fine-grained metavolcanic	157
	20-30	No Recovery			158
17	0-10	No Recovery			159
	10-20	1	Flake	Fine-grained metavolcanic	160

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
	20-30	1	Flake	Fine-grained metavolcanic	161
18	0-10	No Recovery			162
	10-20	No Recovery			163
	20-30	1	Flake	Fine-grained metavolcanic	164
	30-40	No Recovery			165

TABLE 6.3–5
Excavation Results, TU 1 & 2, Site SDI-17,963

Test Unit	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	1	Utilized Flake	Fine-grained Metavolcanic	166
		12	Flakes	Fine-grained Metavolcanic	167
		1	Utilized Flake	Medium-grained Metavolcanic	168
		44	Flakes	Medium-grained Metavolcanic	169
		1	Flake	Quartz	170
	10-20	1	Metate 25%/uni/pol/peck/med	Granite	171
		10	Flakes	Fine-grained Metavolcanic	172
		29	Flakes	Medium-grained Metavolcanic	173
		1	Flakes	Quartz	174
	20-30	8	Flakes	Fine-grained Metavolcanic	175
		4	Debitage	Medium-grained Metavolcanic	176
		28	Flakes	Medium-grained Metavolcanic	177
2	0-10	1	Flake Scraper	Fine-grained Metavolcanic	178
		3	Flakes	Fine-grained Metavolcanic	179
		4	Debitage	Medium-grained Metavolcanic	180
		28	Flakes	Medium-grained Metavolcanic	181
	10-20	4	Flakes	Fine-grained Metavolcanic	182
		22	Flakes	Medium-grained Metavolcanic	183
	20-30	11	Flakes	Fine-grained Metavolcanic	184
		32	Flakes	Medium-grained Metavolcanic	185
	30-40	13	Flakes	Fine-grained Metavolcanic	186
		1	Scraper	Medium-grained Metavolcanic	187
		1	Utilized Flake	Medium-grained Metavolcanic	188
		47	Flakes	Medium-grained Metavolcanic	189
	40-50	1	Debitage	Fine-grained Metavolcanic	190

Test Unit	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
		8	Flakes	Fine-grained Metavolcanic	191
		1	Retouched Flake	Medium-grained Metavolcanic	192
		1	Retouched Flake	Medium-grained Metavolcanic	193
		1	Utilized Flake	Medium-grained Metavolcanic	194
		1	Utilized Flake	Medium-grained Metavolcanic	195
		3	Debitage	Medium-grained Metavolcanic	196
		40	Flakes	Medium-grained Metavolcanic	197

TABLE 6.3–6

Summary by Depth, TU 1, Site SDI-17,963

Recovery Category	0-10	10-20	20-30	Total	Percent
Expedient Tools:					
Utilized Flake(s)	2	-	-	2	1.43
Groundstone Tools:					
Metate(s)	-	1	-	1	0.71
Lithic Production Waste:					
Debitage	-	-	4	4	2.86
Flake(s)	57	40	36	133	95.00
Total:	59	41	40	140	100.00
Percent:	42.14	29.29	28.57	100.00	

**Rounded totals may not equal 100%*

TABLE 6.3–7
Summary by Depth, TU2, Site SDI-17,963

Recovery Category	0-10	10-20	20-30	30-40	40-50	Total	Percent
Expedient Tools:							
Utilized Flake(s)	-	-	-	1	2	3	1.35
Lithic Production Waste:							
Debitage	4	-	4	-	4	12	5.38
Flake(s)	31	26	43	60	48	208	93.27
Precision Tools							
Flake Scraper(s)	1	-	-	-	-	1	0.45
Scraper(s)	-	-	-	1	-	1	0.45
Retouched Flake(s)	-	-	-	-	2	2	0.90
Total:	36	26	47	62	56	223	101.79
Percent:	16.14	11.66	21.08	27.80	25.11	101.79	

**Rounded totals may not equal 100%*

<u>TABLE 6.3–8</u>

Lithic Material Distribution, Site SDI-17,963

Recovery Category	CGM	FGM	Granite	MGM	Quartz	Total	Percent
Expedient Tools:							
Utilized Debitage	-	1	-	-	-	1	0.19
Utilized Flake(s)	-	2	-	6	-	8	1.53
Groundstone Tools:							
Metate(s)	-	-	1	-	-	1	0.19
Lithic Production Waste:							
Core(s)	-	-	-	2	-	2	0.38
Debitage	-	1	-	18	-	19	3.64
Flake(s)	1	109	-	365	2	477	91.38
Percussion Tools:							
Hammerstone(s)	-	-	-	1	-	1	0.19
Precision Tools:							
Core Tool(s)	-	1	-	-	-	1	0.19
Flake Scraper(s)	-	1	-	2	-	3	0.57
Retouched Debitage	-	-	-	1	-	1	0.19
Retouched Flake(s)	-	-	-	2	-	2	0.38
Scraper(s)	-	1	-	5	-	6	1.15
Total:	1	116	1	402	2	522	99.98
Percent:	0.19	22.22	0.19	77.01	0.38	99.99	

**Rounded totals may not equal 100%*

6.4 Site SDI-17,964

6.4.1 Site Description

Site SDI-17,964 is a moderately dense prehistoric lithic scatter located on the eastern edge of a small, low-lying mesa and continuing down the east-facing slope. The site sits uphill and west of site TEMP 9 in the south-central portion of the project area, at an elevation of approximately 520 feet AMSL (Figure 6.4–1). The site was identified during the current survey and subsequently tested for significance. Disturbances in the area consist of activities associated with previous agricultural use, off-road vehicles, and United State Border Patrol. Some degree of erosion has also occurred in the area. Vegetation within the site is sparse, and mima mounds are present within the site and border the site to the west. No bedrock outcrops, features, or darkened soils were observed. The site includes exposed cobbles suitable for lithic tool production by prehistoric populations. The general configuration of the resource is shown in Figure 6.4–1, and the setting of the site is shown in Plates 6.4–1 and 6.4–2. Testing of Site SDI-17,964 consisted of the collection and mapping of all surface artifacts and the excavation of 11 shovel tests and two test units.

6.4.2 Description of Field Investigations

Field investigations at Site SDI-17,964 were conducted using the standard methodologies described in Section 5.0. A total of 297 artifacts were recovered during the current investigation of the site. A summary of total artifact recovery is presented in Table 6.4–1, while detailed provenience information is presented in the artifact catalog (Appendix IV).

Surface Recordation

The entire surface of the site was inspected for artifacts and features. All artifacts and excavations were mapped using a handheld GPS unit (Figure 6.4–1). Ground visibility was excellent throughout the area. The majority of the site surface appears to be moderately eroded resulting in very little vegetation, most of which is limited to the low-lying ground between the mima mounds where small amounts of alluvium have accumulated.

All artifacts observed on the surface of the site were mapped and collected, the locations of which are illustrated in Figure 6.4–1. The surface artifacts were a dense and evenly distributed scatter throughout the site area. The surface collection results, summarized in Table 6.4–1 and detailed in Table 6.4–2, consisted of a total of 245 artifacts. The surface expression of the site measured approximately 61 meters (198 feet) east/west by 75 meters (246 feet) north/south covering approximately 4,029 square meters (43,368 square feet). The assemblage included 12 precision tools, one multi-use tool, 12 expedient tools, eight percussion tools, and 212 pieces of lithic production waste.

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-17,964 was investigated through the excavation of a total of 11 STPs. Shovel test pits were excavated across the entire site, but focused on the areas with the highest concentration of surface artifacts. The locations of the STPs are illustrated in Figure 6.4–1. All STPs were excavated in decimeter levels to a minimum depth of 30 centimeters, unless a culturally sterile level or bedrock was encountered. Of the 11 STPs excavated at Site SDI-17,964, four were positive for cultural materials. The artifact recovery from the STPs is summarized in Table 6.4–1 and detailed in Table 6.4–3.

Subsurface testing of Site SDI-17,964 continued with the excavation of two standard one-by-one meter test units. The test units were positioned to sample the areas of greatest potential to produce subsurface deposits, as identified by the STPs and surface collections. Test Unit 1 (TU 1) was placed in the central portion of the site, near STP 1. Test Unit 2 (TU 2) was placed in the central portion of the site, between STP 2 and STP 3. The locations of the test units are illustrated in Figure 6.4–1.

The test units were excavated in standard decimeter levels to subsoil, and all removed soils were sifted through one-eighth-inch mesh hardware cloth. Recovery from TU 1 consisted of 40 lithic artifacts, 38 pieces of lithic production waste, one percussion tool, and one precision tool. Cultural material was recovered to a maximum depth of 25 centimeters in TU 1, where hard clay/decomposed granite (DG) was encountered. The test unit recovery from TU 1 is detailed in Table 6.4–4 and summarized by depth in Table 6.4–5.

The soil from TU 1 was characterized as a moderately compact to very compact grayish brown (10YR 5/2) loam to a depth of approximately 25 centimeters, overlying a very compact, light grayish brown (10YR 6/2) clay loam subsoil with large cobble/DG inclusions to the maximum depth of the unit at 28 centimeters. The north wall of TU 1 is illustrated in Figure 6.4–2 and pictured in Plate 6.4–3.

Recovery from TU 2 consisted of one MGM flake in the 0-10 centimeter level. Cultural material was recovered to a maximum depth of ten centimeters in TU 2, where hard clay/decomposed granite (DG) was encountered. An additional ten-centimeter level of culturally sterile subsoil was excavated to verify the absence of cultural material from this stratum. The test unit recovery from TU 2 is detailed in Table 6.4–4 and summarized by depth in Table 6.4–6.

The soil from TU 2 was characterized as a moderately compact to very compact grayish brown (10YR 5/2) loam to a depth of approximately 10 centimeters, overlying a very compact, light grayish brown (10YR 6/2) clay loam subsoil with large cobble/DG inclusions to the maximum depth of the unit at 20 centimeters. The north wall of TU 2 is illustrated in Figure 6.4–3 and pictured in Plate 6.4–4.

The subsurface expression of the site, as identified by the subsurface tests that produced artifacts, was smaller than the surface expression. The subsurface deposit at Site SDI-17,964 covers approximately 333 square meters (1,093 square feet).

<u>Figure 6.4–1</u>
Excavation Location Map — Site SDI-17,964

(Deleted for Public Review; Bound Separately)

Plate 6.4–1 Overview of Site SDI-17,964, facing north.

Plate 6.4–2 Overview of Site SDI-17,964, facing south.

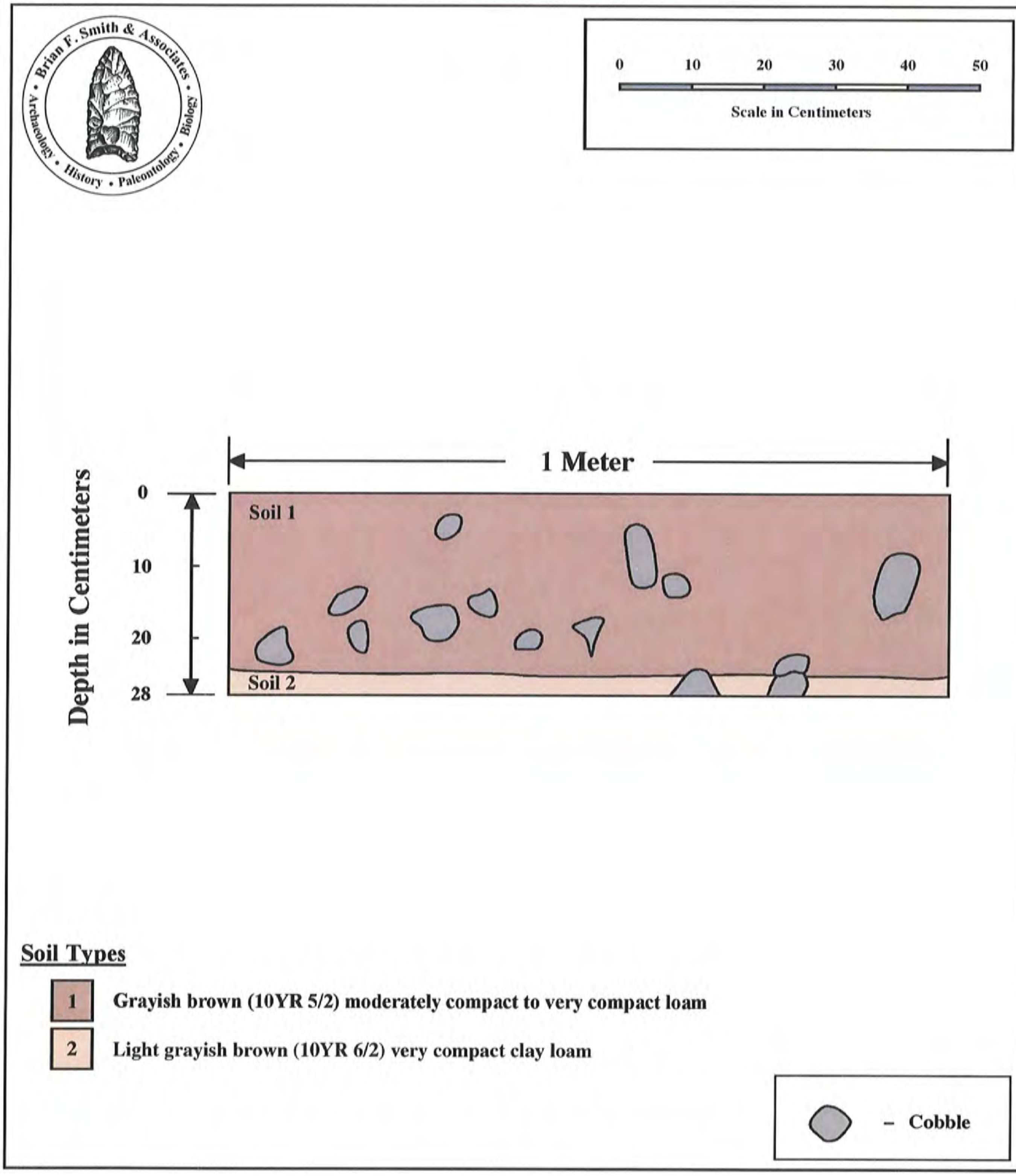
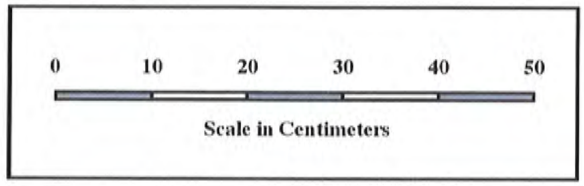
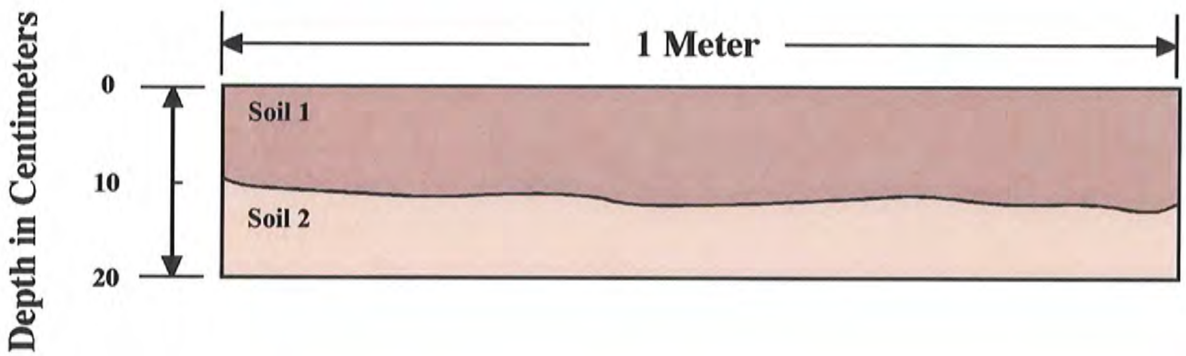


Figure 6.4–2
North Wall Profile of Test Unit 1
Site SDI-17,964
The Otay Business Park Project





Soil Types

1 Grayish brown (10YR 5/2) moderately compact loam

2 Light grayish brown (10YR 6/2) very compact clay loam

Figure 6.4–3

North Wall Profile of Test Unit 2

Site SDI-17,964

The Otay Business Park Project

Plate 6.4–3 Test Unit 1 North Wall, Site SDI-17,964.

Plate 6.4–4 Test Unit 2 North Wall, Site SDI-17,964.

6.4.3 Laboratory Analysis

Laboratory analysis for SDI-17,964 included the standard procedures described in Section 5.0 of this report. All artifacts and ecofacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-17,964, including 297 artifacts, is summarized in Table 6.4–1 and detailed in Appendix IV.

Lithic Artifact Analysis

Lithic production waste accounted for the largest category of lithic artifacts, representing 87.84% (N=261) of the lithic artifact collection, and included 220 flakes, 35 pieces of debitage, and six cores. The remaining lithic collection consisted of 13 precision tools (4.41%), 13 expedient tools (4.41%), nine percussion tools (3.04%), and one multi-use tool (0.34%). Activities indicated by the artifacts recovered from the site include procurement, processing, and maintenance of lithic tools.

The lithic artifact collection included a small range of material types, all of which are locally available. The majority of artifacts were made from local medium- and fine-grained metavolcanics, which made up 99.67% (N=296) of the total. The only other material represented was coarse-grained metavolcanic (0.34%). The lithic material distribution for the artifact assemblage is presented in Table 6.4–7.

6.4.4 Discussion

The testing program demonstrated that Site SDI-17,964 consists of a prehistoric surface artifact scatter and moderately deep subsurface deposit that yielded 186 artifacts. The overall site dimensions, as identified by the surface distribution of artifacts, measure approximately 61 meters (198 feet) east/west by 75 meters (246 feet) north/south covering approximately 4,029 square meters (43,368 square feet). The surface scatter, which has been collected and analyzed, was moderately dense and evenly scattered across the site. Test unit and shovel test excavations indicate that the subsurface deposit, albeit very isolated, extends to a depth of 25 centimeters. There is little variety in the artifact types recovered and a complete absence of ecofacts. Site SDI-17,964 does not appear to exhibit additional research potential.

The site is interpreted as a lithic resource extraction, processing, and maintenance site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. Although testing indicated that a shallow subsurface deposit is present, it appears to be very isolated with very little research potential.

6.4.5 Summary

The analysis of the prehistoric cultural materials recovered from Site SDI-17,964 revealed an isolated and shallow cultural deposit at the site extending to a depth of 25 centimeters. The recovered lithic artifacts indicate that site activities were focused on the procurement, processing, and maintenance of lithic tools.

Due to erosion and the specialized nature of Site SDI-17,964, it is unlikely to produce buried cultural features and, therefore, lacks additional research potential. However, the site did yield information during the current testing program. Therefore, Site SDI-17,964 is considered a significant resource according to criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007).

TABLE 6.4–1

Artifact Summary, Site SDI-17,964

Recovery Category	Surface	Shovel Test	Test Units	Total	Percent
Expedient Tools:					
Utilized Debitage	4	-	-	4	1.35
Utilized Flake(s)	8	1		9	3.8
Lithic Production Waste:					
Core(s)	5	-	1	6	2.02
Debitage	32	-	3	35	11.78
Flake(s)	175	11	34	220	74.07
Multi-Use Tools:					
Hammer/Core(s)	1	-	-	1	0.34
Percussion Tools:					
Hammerstone(s)	8	-	1	9	3.8
Precision Tools:					
Cobble Tool(s)	2	-	-	2	0.67
Core Tool(s)	2	-	-	2	0.67
Flake Scraper(s)	2	-	-	2	0.67
Retouched Flake(s)	4	-	1	5	1.68
Retouched Spall	1	-	-	1	0.34
Scraper(s)	1	-	-	1	0.34
Total:	245	12	40	297	101.53
Percent:	82.49	4.04	13.47	100.00	

**Rounded totals may not equal 100%*

TABLE 6.4–2
Surface Recovery, Site SDI-17,964

Surface	Quantity	Artifact Type	Material Type	Catalog #
1	2	Flakes	Fine-grained Metavolcanic	1
2	1	Flake Scraper	Medium-grained Metavolcanic	2
2	1	Scraper	Medium-grained Metavolcanic	3
2	1	Flake	Medium-grained Metavolcanic	4
3	2	Flakes	Medium-grained Metavolcanic	5
4	1	Flake	Medium-grained Metavolcanic	6
5	1	Retouched Flake	Fine-grained Metavolcanic	7
5	1	Flake	Medium-grained Metavolcanic	8
6	1	Core Tool	Medium-grained Metavolcanic	9
6	1	Flake	Medium-grained Metavolcanic	10
7	2	Flakes	Medium-grained Metavolcanic	11
8	1	Flake	Medium-grained Metavolcanic	12
9	1	Flake	Medium-grained Metavolcanic	13
10	1	Flake	Fine-grained Metavolcanic	14
10	3	Flakes	Medium-grained Metavolcanic	15
11	1	Flake	Fine-grained Metavolcanic	16
11	2	Flakes	Medium-grained Metavolcanic	17
12	1	Hammerstone, spherical	Medium-grained Metavolcanic	18
12	4	Debitage	Medium-grained Metavolcanic	19
12	6	Flakes	Medium-grained Metavolcanic	20
13	1	Cobble Tool	Medium-grained Metavolcanic	21
13	3	Debitage	Medium-grained Metavolcanic	22
13	7	Flakes	Medium-grained Metavolcanic	23
14	1	Utilized Debitage	Medium-grained Metavolcanic	24
14	1	Core	Medium-grained Metavolcanic	25
14	13	Flakes	Medium-grained Metavolcanic	26
15	1	Retouched Flake	Medium-grained Metavolcanic	27
15	4	Debitage	Medium-grained Metavolcanic	28
15	12	Flakes	Medium-grained Metavolcanic	29

Surface	Quantity	Artifact Type	Material Type	Catalog #
16	2	Flakes	Medium-grained Metavolcanic	30
17	1	Flake	Fine-grained Metavolcanic	31
18	1	Flake	Medium-grained Metavolcanic	32
19	1	Utilized Flake	Fine-grained Metavolcanic	33
20	1	Flake	Medium-grained Metavolcanic	34
21	5	Flakes	Medium-grained Metavolcanic	35
22	2	Flakes	Medium-grained Metavolcanic	36
23	1	Utilized Debitage	Medium-grained Metavolcanic	37
23	1	Debitage	Medium-grained Metavolcanic	38
23	2	Flakes	Medium-grained Metavolcanic	39
24	1	Debitage	Medium-grained Metavolcanic	40
24	2	Flakes	Medium-grained Metavolcanic	41
25	1	Flake	Medium-grained Metavolcanic	42
27	1	Debitage	Medium-grained Metavolcanic	43
27	2	Flakes	Medium-grained Metavolcanic	44
28	1	Hammerstone, circular	Medium-grained Metavolcanic	45
28	1	Debitage	Medium-grained Metavolcanic	46
28	3	Flakes	Medium-grained Metavolcanic	47
29	1	Debitage	Medium-grained Metavolcanic	48
29	1	Flake	Medium-grained Metavolcanic	49
30	1	Flake	Medium-grained Metavolcanic	50
31	1	Flake	Medium-grained Metavolcanic	51
32	1	Debitage	Medium-grained Metavolcanic	52
32	6	Flakes	Medium-grained Metavolcanic	53
33	1	Cobble Tool	Medium-grained Metavolcanic	54
33	1	Debitage	Medium-grained Metavolcanic	55
33	5	Flakes	Medium-grained Metavolcanic	56
34	3	Flakes	Medium-grained Metavolcanic	57
35	1	Flake	Medium-grained Metavolcanic	58
36	1	Debitage	Fine-grained Metavolcanic	59
36	1	Flake	Fine-grained Metavolcanic	60

Surface	Quantity	Artifact Type	Material Type	Catalog #
36	3	Flakes	Medium-grained Metavolcanic	61
37	5	Flakes	Medium-grained Metavolcanic	62
38	2	Flakes	Medium-grained Metavolcanic	63
39	1	Flake	Medium-grained Metavolcanic	64
40	1	Utilized Debitage	Medium-grained Metavolcanic	65
40	1	Flake	Medium-grained Metavolcanic	66
41	2	Flakes	Medium-grained Metavolcanic	67
42	1	Flake	Medium-grained Metavolcanic	68
43	1	Utilized Debitage	Fine-grained Metavolcanic	69
43	1	Flake	Medium-grained Metavolcanic	70
44	5	Debitage	Medium-grained Metavolcanic	71
44	5	Flakes	Medium-grained Metavolcanic	72
45	1	Hammerstone, circular	Medium-grained Metavolcanic	73
45	1	Retouched Spall	Medium-grained Metavolcanic	74
45	2	Flakes	Medium-grained Metavolcanic	75
46	1	Hammerstone, spherical	Medium-grained Metavolcanic	76
47	3	Debitage	Medium-grained Metavolcanic	77
47	2	Flakes	Medium-grained Metavolcanic	78
48	1	Core	Medium-grained Metavolcanic	79
48	1	Flake	Medium-grained Metavolcanic	80
49	1	Core	Medium-grained Metavolcanic	81
49	1	Flake	Medium-grained Metavolcanic	82
50	2	Flakes	Medium-grained Metavolcanic	83
51	2	Flakes	Medium-grained Metavolcanic	84
52	1	Debitage	Medium-grained Metavolcanic	85
53	1	Flake	Fine-grained Metavolcanic	86
53	1	Flake	Medium-grained Metavolcanic	87
53	1	Flake	Coarse-grained Metavolcanic	88
54	1	Flake	Medium-grained Metavolcanic	89
55	2	Flakes	Medium-grained Metavolcanic	90
56	1	Flake	Medium-grained Metavolcanic	91

Surface	Quantity	Artifact Type	Material Type	Catalog #
57	1	Flake	Medium-grained Metavolcanic	92
58	1	Flake	Medium-grained Metavolcanic	93
60	1	Flake Scraper	Medium-grained Metavolcanic	94
60	1	Core	Medium-grained Metavolcanic	95
62	1	Flake	Medium-grained Metavolcanic	96
64	1	Flake	Medium-grained Metavolcanic	97
65	2	Flakes	Medium-grained Metavolcanic	98
66	2	Debitage	Medium-grained Metavolcanic	99
67	3	Flakes	Medium-grained Metavolcanic	100
68	1	Hammer/Core	Medium-grained Metavolcanic	101
68	1	Utilized Flake	Medium-grained Metavolcanic	102
70	2	Flakes	Medium-grained Metavolcanic	103
72	1	Hammerstone, spherical	Medium-grained Metavolcanic	104
73	1	Utilized Flake	Medium-grained Metavolcanic	105
73	1	Flake	Medium-grained Metavolcanic	106
74	1	Utilized Flake	Fine-grained Metavolcanic	107
75	1	Hammerstone, spherical	Medium-grained Metavolcanic	108
75	1	Core Tool	Medium-grained Metavolcanic	109
75	1	Debitage	Medium-grained Metavolcanic	110
75	3	Flakes	Medium-grained Metavolcanic	111
76	1	Utilized Flake	Fine-grained Metavolcanic	112
77	1	Flake	Medium-grained Metavolcanic	113
79	1	Utilized Flake	Medium-grained Metavolcanic	114
79	1	Flake	Medium-grained Metavolcanic	115
80	1	Flake	Fine-grained Metavolcanic	116
80	1	Retouched Flake	Medium-grained Metavolcanic	117
80	1	Flake	Medium-grained Metavolcanic	118
81	1	Flake	Medium-grained Metavolcanic	119
82	1	Flake	Medium-grained Metavolcanic	120
83	3	Flakes	Medium-grained Metavolcanic	121
84	1	Flake	Medium-grained Metavolcanic	122

Surface	Quantity	Artifact Type	Material Type	Catalog #
86	1	Flake	Medium-grained Metavolcanic	123
87	1	Flake	Medium-grained Metavolcanic	124
88	1	Flake	Medium-grained Metavolcanic	125
89	1	Flake	Fine-grained Metavolcanic	126
89	1	Utilized Flake	Medium-grained Metavolcanic	127
90	1	Flake	Fine-grained Metavolcanic	128
91	1	Retouched Flake	Medium-grained Metavolcanic	129
91	1	Flake	Medium-grained Metavolcanic	130
92	2	Flakes	Medium-grained Metavolcanic	131
93	1	Flake	Fine-grained Metavolcanic	132
94	1	Hammerstone, circular	Medium-grained Metavolcanic	133
94	1	Debitage	Medium-grained Metavolcanic	134
95	1	Hammerstone	Fine-grained Metavolcanic	135
95	1	Utilized Flake	Medium-grained Metavolcanic	136
95	1	Flake	Medium-grained Metavolcanic	137
96	1	Flake	Medium-grained Metavolcanic	138
97	1	Flake	Fine-grained Metavolcanic	139
98	1	Core	Medium-grained Metavolcanic	140
99	2	Flakes	Medium-grained Metavolcanic	141

<u>TABLE 6.4–3</u>

Shovel Test Excavations, Site SDI-17,964

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	1	Flake	Fine-grained metavolcanic	142
	0-10	2	Flakes	Medium-grained metavolcanic	143
	10-20	5	Flakes	Medium-grained metavolcanic	144
	20-30	No Recovery			179
2	0-10	1	Flake	Medium-grained metavolcanic	145
	10-20	No Recovery			146
	20-30	No Recovery			147
3	0-10	2	Flakes	Medium-grained metavolcanic	148
	10-20	No Recovery			149
	20-30	No Recovery			150
4	0-10	No Recovery			151
	10-20	No Recovery			152
	20-30	No Recovery			153
5	0-10	No Recovery			154
	10-20	No Recovery			155
	20-30	No Recovery			156
6	0-10	No Recovery			157
	10-20	1	Utilized Flake	Medium-grained metavolcanic	158
	20-30	No Recovery			159
7	0-10	No Recovery			160
	10-20	No Recovery			161
	20-30	No Recovery			162
8	0-10	No Recovery			163
	10-20	No Recovery			164

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
	20-30	No Recovery			165
9	0-10	No Recovery			180
	10-20	No Recovery			181
	20-30	No Recovery			182
10	0-10	No Recovery			183
	10-20	No Recovery			184
	20-30	No Recovery			185
11	0-10	No Recovery			166
	10-20	No Recovery			167
	20-30	No Recovery			168

TABLE 6.4–4

Excavation Results, TU 1 & 2, Site SDI-17,964

Test Unit	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	6	Flakes	Fine-grained Metavolcanic	169
		3	Debitage	Medium-grained Metavolcanic	170
		8	Flakes	Medium-grained Metavolcanic	171
	10-20	1	Hammerstone	Fine-grained Metavolcanic	172
		1	Core	Fine-grained Metavolcanic	173
		2	Flakes	Fine-grained Metavolcanic	174
		1	Retouched Flake	Medium-grained Metavolcanic	175
		17	Flakes	Medium-grained Metavolcanic	176
2	0-10	1	Flake	Medium-grained Metavolcanic	177
	10-20	0	No Recovery		178

TABLE 6.4–5

Summary by Depth, TU 1, Site SDI-17,964

Recovery Category	0-10	10-20	20-30	Total	Percent
Lithic Production Waste:					
Core(s)	-	1	-	1	2.56
Debitage	3	-	-	3	7.69
Flake(s)	15	19	-	34	84.62
Percussion Tools:					
Hammerstone(s)	-	1	-	1	2.56
Precision Tools:					
Retouched Flake(s)	-	1	-	1	2.56
Total:	18	22	-	40	99.99
Percent:	43.59	56.41	-	100.00	

**Rounded totals may not equal 100%*

TABLE 6.4–6

Summary by Depth, TU 2, Site SDI-17,964

Recovery Category	0-10	10-20	20-30	Total	Percent
Lithic Production Waste:					
Flake(s)	1	-	-	1	100.00
Total:	1	-	-	1	100.00
Percent:	100.00		-	100.00	

**Rounded totals may not equal 100%*

TABLE 6.4–7
Lithic Material Analysis, Site SDI-17,964

Recovery Category	CGM	FGM	MGM	Total	Percent
Expedient Tools:					
Utilized Debitage	-	1	3	4	1.35
Utilized Flake(s)	-	3	6	9	3.04
Lithic Production Waste:					
Core(s)	-	1	5	6	2.03
Debitage	-	1	34	35	11.82
Flake(s)	1	21	198	220	73.99
Multi-Use Tools:					
Hammer/Core(s)	-	-	1	1	0.34
Percussion Tools:					
Hammerstone(s)	-	2	7	9	3.04
Precision Tools:					
Cobble Tool(s)	-	-	2	2	0.68
Core Tool(s)	-	-	2	2	0.68
Flake Scraper(s)	-	-	2	2	0.68
Retouched Flake(s)	-	1	4	5	1.69
Retouched Spall	-	-	1	1	0.34
Scraper(s)	-	-	1	1	0.34
Total:	1	30	266	297	100.02
Percent:	0.34	10.14	89.53	100.01	

**Rounded totals may not equal 100%*

6.5 Site SDI-17,965

6.5.1 Site Description

Site SDI-17,965 is a very small prehistoric temporary camp located on a relatively broad, south-sloping knoll south of Site SDI-8078 in the north-central portion of the project area (Figure 6.0–1). The site was identified as a small marine shell scatter during the current survey and subsequently tested for significance. Elevation at the site is approximately 540 feet AMSL. Disturbances consisted of activities associated with agricultural use and erosion. The general configuration of the resource is shown in Figure 6.5–1 and the setting of the site is shown in Plate 6.5–1. Testing of the site by BFSA consisted of the mapping and collection of all surface artifacts, and the excavation of five shovel tests and one standard test unit.

6.5.2 Description of Field Investigations

Field investigations at Site SDI-17,965 were conducted using the standard methodologies described in Section 5.0. A total of two flakes and 88.1 grams of marine shell were recovered during investigations at the site. A summary of recovery from the site is presented in Table 6.5–1, while detailed provenience information is provided in the artifact catalog (Appendix IV).

<u>Surface Recordation</u>

The entire surface of the site was inspected for artifacts and features. All artifacts and excavations were mapped using a handheld GPS unit (Figure 6.5–1). The majority of the site surface was covered with dense grasses; subsequently, surface visibility was poor across most of the site. To account for poor ground visibility, one surface scrape was placed within the site (Figure 6.5–1). No artifacts were collected during the surface collection. The surface expression of the site, as defined by the marine shell scatter, covers approximately 100 square meters (1,076 square feet). The single surface scrape placed at SDI-17,965 did not locate any artifacts or ecofacts. No bedrock outcrops, features, or darkened soils were observed.

<u>Subsurface Excavation</u>

The potential for subsurface cultural deposits at Site SDI-17,965 was investigated through the excavation of a total of five STPs and one test unit. Shovel test pits were excavated across the entire site, with one being placed directly over the small shell scatter (STP 1). The locations of the STPs are shown in Figure 6.5–1. All of the shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters, unless one sterile level or bedrock was encountered. Of the five STPs excavated at Site SDI-17,965, all but one (STP 1) were negative for cultural material. Depth of recovery extended to a maximum depth of 50 centimeters in STP 1. The artifact recovery from STP 1 included one MGM flake from 10-20 centimeters and 67.1 grams of marine shell, primarily *chione* sp., from 0-50 centimeters. The artifact recovery from the STPs is summarized in Table 6.5–1 and detailed in Table 6.5–2.

Subsurface testing of Site SDI-17,965 continued with the excavation of one standard one-by-one meter test unit. The test unit was positioned to sample the area of greatest potential to produce subsurface deposits, as identified by the STPs and the surface marine shell. Test Unit 1 (TU 1) was placed adjacent to STP 1 over the remaining shell fragments visibile on the surface. The location of the test unit is illustrated in Figure 6.5–1.

The test unit was excavated in standard decimeter levels to subsoil, and all removed soils were sifted through one-eighth-inch mesh hardware cloth. Recovery from TU 1 consisted of one MGM flake from 0-10 centimeters and 21 grams of marine shell from 0-30 centimeters. The recovered shell consisted primarily of *chione* sp. The test unit recovery is detailed in Table 6.5–3 and summarized by depth in Table 6.5–4.

The soil from TU 1 was characterized as a loose, dark grayish brown (10YR 4/2) clay to a depth of approximately ten centimeters, overlying a moderately compact grayish brown (10YR 5/2) clay loam subsoil to the maximum depth of the unit at 40 centimeters. The north wall of TU 1 is illustrated in Figure 6.5–2 and pictured in Plate 6.5–2.

The subsurface expression of the site, as identified by the subsurface tests that produced artifacts, mirrors that of the surface expression (the marine shell scatter). Site SDI-17,965 covers approximately 100 square meters (1,076 square feet).

6.5.3 Laboratory Analysis

Laboratory analysis for Site SDI-17,965 included the standard procedures described in Section 5.0 of this report. All artifacts and ecofacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-17,965 included a total of two MGM flakes and 88.1 grams of marine shell, primarily *chione* sp. The artifact recovery from the site is summarized in Table 6.5–1 and detailed in Appendix IV.

6.5.4 Discussion

The current testing program demonstrated that Site SDI-17,965 consists of a small isolated surface marine shell scatter and a shallow subsurface deposit that yielded one artifact and additional marine shell. The overall site dimensions, as identified by the surface and subsurface distribution of artifacts and ecofacts, covers an approximately 10 meter radius over 100 square meters (1,076 square feet). The subsurface deposit was isolated to a small pocket area less than a few meters in diameter, based on the negative shovel test results beyond STP 1. Based on STP 1, subsurface recovery extended to a depth of 50 centimeters; however, TU 1 showed recovery to a depth of only 30 centimeters. Since TU 1 and STP 1 were adjacent, the difference in depths can be attributed to either marine shell spilling down the inner walls of the STP or just an isolated undulation in deposit depth. Based on the nature of the deposit, and the lack of variety and quantity of material recovered from the site, the site does not exhibit additional research potential.

The site is interpreted as a limited-use campsite area where activities included marine resource preparation and consumption, and very limited lithic tool production and/or maintenance. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. The research potential of the site has been exhausted through the current testing program.

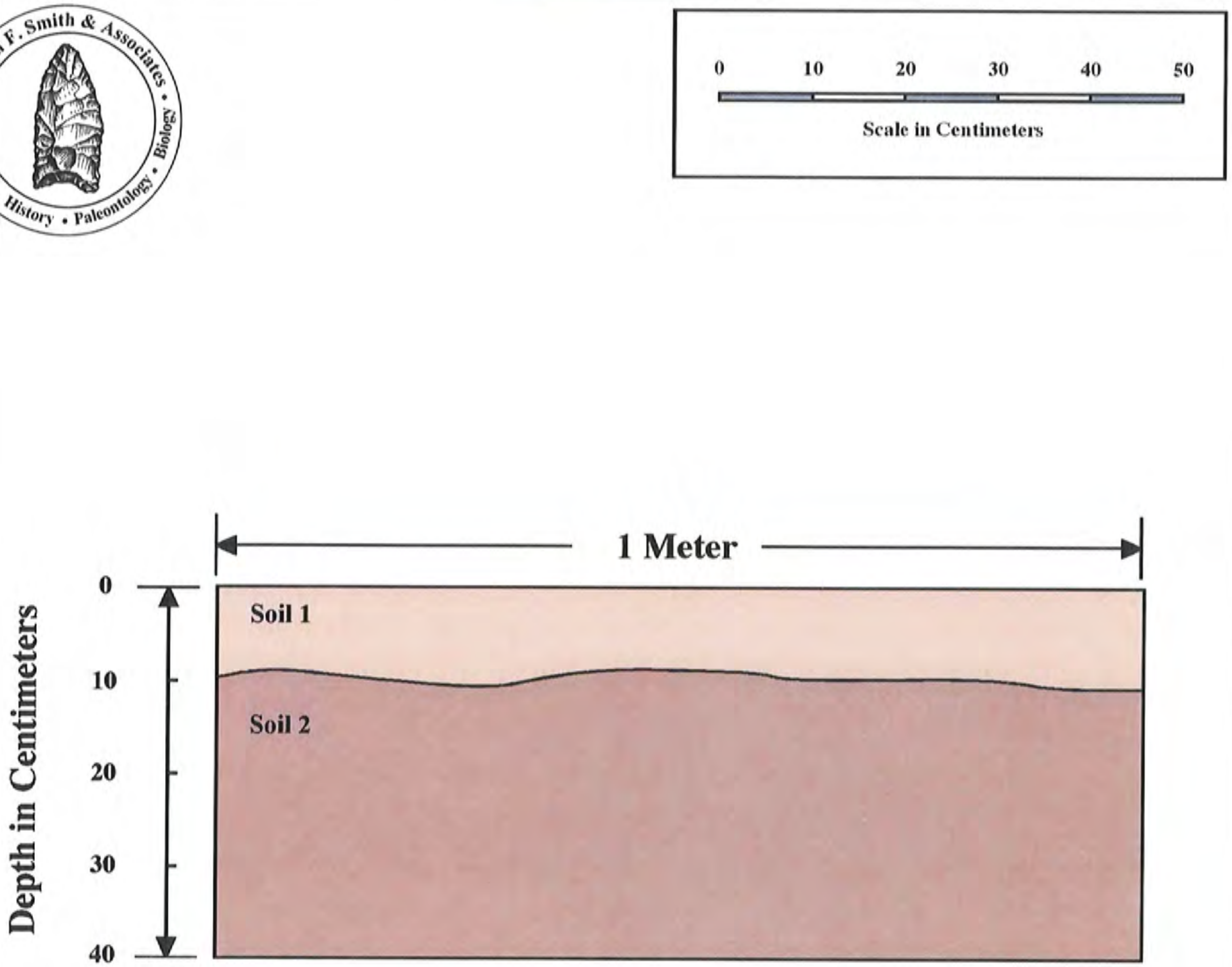
6.5.5 Summary

Analysis of cultural materials recovered from Site SDI-17,965 revealed a sparse surface scatter of marine shell ecofacts with an equally sparse subsurface deposit. The recovered materials indicate that site activities were focused on marine resource preparation and consumption, and very limited lithic tool manufacture and maintenance.

Although Site SDI-17,965 exhibits a sparse intact subsurface cultural deposit, the lack of variety and breadth indicate the site has no potential for buried cultural features and no additional research potential.. However, the site did yield information during the current testing program. Therefore, according to the criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007), Site SDI-17,965 is considered a significant cultural resource.

<u>Figure 6.5–1</u>
Excavation Location Map — Site SDI-17,965

(Deleted from Public Review; Bound Separately)



Soil Types

1	**Dark grayish brown (10YR 4/2) loosely compact clay**
2	**Grayish brown (10YR 5/2) moderately compact to compact clay loam**

Figure 6.5–2

North Wall Profile of Test Unit 1

Site SDI-17,965

The Otay Business Park Project

Plate 6.5–1 Overview of Site SDI-17,965, facing east.

Plate 6.5–2 North Wall of Test Unit 1, SDI-17,965.

TABLE 6.5–1

Artifact Summary, Site SDI-17,965

Recovery Category	Surface Scrape	Shovel Test	Test Units	Total	Percent
Ecofacts:					
Burnt Shell	-	0.5 g.	0.2 g.	0.7 g.	-
Shell	-	66.6 g.	20.8 g.	87.4 g.	-
Lithic Production Waste:					
Flake(s)	-	1	1	2	100.00
Total:	0	1	1	2	100.00
Percent:	0	50.00	50.00	100.00	

**Rounded totals may not equal 100%*

<u>TABLE 6.5–2</u>

Shovel Test Excavations, Site SDI-17,965

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10		Shell	Unsorted	1
			Burnt Shell	Unsorted	2
	10-20	1	Flake	Medium-grained Metavolcanic	3
			Shell	Unsorted	4
	20-30		Shell	Unsorted	5
	30-40		Shell	Unsorted	6
	40-50		Shell	Unsorted	7
	50-60		No Recovery		8
2	0-10		No Recovery		9
	10-20				10
	20-30				11
3	0-10		No Recovery		12
	10-20				13
	20-30				14
4	0-10		No Recovery		15
	10-20				16
	20-30				17
5	0-10		No Recovery		18
	10-20				19
	20-30				20

TABLE 6.5–3

Excavation Results, TU 1, Site SDI-17,965

Test Unit	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	1	Flake	Medium-grained Metavolcanic	21
			Shell	Unsorted	22
	10-20		Shell	Unsorted	23
			Burnt Shell	Unsorted	24
	20-30		Shell	Unsorted	25

TABLE 6.5–4

Summary by Depth, TU 1, Site SDI-17,965

Recovery Category	0-10	10-20	20-30	Total	Percent
Ecofacts:					
Burnt Shell		0.2 g.	-	0.2g	
Shell	14.8g	2.4g	3.6g	20.8g	
Lithic Production Waste:					
Flake(s)	1	-	-	1	100.00
Total:	1	0	0	1	100.00
Percent:	100.00	0.00	0.00	100.00	

**Rounded totals may not equal 100%*

6.6 Site SDI-17,966/H

6.6.1 Site Description

Site SDI-17,966/H is a multi-component site located in a level area within the western portion of the project area (Figure 6.6–1). The site was identified during the current survey and subsequently tested for significance. Elevation at the site is approximately 520 feet AMSL. Disturbances in the area include disking and agricultural use. Modern trash has been sporadically dumped throughout the surface of the site, and previous grading has disturbed the entire site. Soil from the site has been pushed eastward to a push pile resulting in the deflation of the site.

Except for the push pile of historic and modern trash located in the eastern portion of the project area, ground visibility was moderate and adequate for the surface collection. No bedrock outcrops, prehistoric features, or darkened soils were observed. The general configuration of the resource is illustrated in Figure 6.6–1 and the setting of the site is shown in Plates 6.6–1 and 6.6–2. Testing of Site SDI-17,966/H consisted of collection and mapping of all surface artifacts and the excavation of two surface scrapes, five shovel test pits, and one standard test unit (TU 1).

6.6.2 Description of Field Investigations

Field investigations at Site SDI-17,966/H were conducted using the standard methodologies described in Section 5.0. A total of 12 prehistoric artifacts and 670.6 grams of ecofacts were recovered during the investigation. A total of 184 historic artifacts were recovered during the current investigation. A summary of prehistoric artifact recovery from the site is presented in Table 6.6–1, while detailed provenience information is provided in the artifact catalog (Appendix IV). A summary of historic artifacts by functional category is presented in Table 6.6–12 while detailed provenience information is provided in the artifact catalog (Appendix IV).

<u>Surface Recordation</u>

The entire surface of the site was inspected for artifacts and features. All artifacts and excavations were mapped using a handheld GPS unit (Figure 6.6–1). Portions of the site surface were covered with dense tall grasses, specifically within a historic and modern trash push-pile; subsequently, surface visibility was poor across these areas. The remainder of the site possessed moderate ground visibility. To account for poor ground visibility, two surface scrapes were placed on either side of the dirt road (Figure 6.6–1). The surface artifacts were widely scattered throughout the site. The dimensions of the site, as determined by the surface artifacts, measured approximately 81 meters (266 feet) north/south by 133 meters (436 feet) east/west and covered approximately 9,194 square meters (98,963 square feet). Both prehistoric and historic artifacts were recovered from the surface collection and surface scrapes. In addition to the historic and prehistoric artifacts, modern trash was sporadically dumped across the entire site.

Prehistoric Surface Collection

The surface collection yielded eight prehistoric artifacts and 83.6 grams of marine shell ecofacts. The surface scrapes yielded one MGM flake each and a combined total of 27.2 grams of marine shell. The prehistoric surface assemblage totaled ten lithic artifacts, composed of one expedient tool (a utilized flake) and nine pieces of lithic production waste (flakes). In addition, 110.8 grams of marine shell including 1.0 gram of burnt shell was recovered. The majority of the shell recovered was *chione* sp. All prehistoric artifacts observed on the surface of the site were mapped and collected, the locations of which are illustrated in Figure 6.6–1. The prehistoric surface collection and surface scrape recovery is summarized in Table 6.6–1 and detailed in Tables 6.6–2 and 6.6–3.

Historic Surface Collection

The surface collection yielded a total of 44 historic artifacts. The artifacts represent sporadic dumping of mostly historic ceramics, construction material, and unidentifiable metal and glass. Surface Scrape 7 recovered one unidentifiable porcelain fragment. None of the surface artifacts produced absolute dates and most are functionally ambiguous. The presence of a manhole, security glass, and construction debris is tentative evidence of a commercial context for this part of the assemblage. All historic artifacts observed on the surface of the site were mapped and collected, the locations of which are illustrated in Figure 6.6–1. Detailed lists of the historic surface collection and the surface scrape recovery is provided in Tables 6.6–8 and 6.6–9.

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-17,966/H was investigated through the excavation of eight STPs. Shovel test pits were excavated across the entire site, and were placed according to the sampling strategy (see Section 5.0) and the locations of surface artifacts. The locations of the STPs are shown in Figure 6.6–1. All shovel test pits were excavated in decimeter levels to a minimum depth of 30 centimeters unless one sterile level or bedrock was encountered.

In addition to the STPs, the subsurface investigation of Site SDI-17,966/H continued with the excavation of one standard one-by-one meter test unit (TU 1). The placement of TU 1 was based on the STP recovery. STP 7 yielded the highest recovery in the form of marine shell ecofacts and was placed within the historic debris-push pile located in the eastern portion of the site. TU 1 was placed directly west of STP 7. The placement of TU 1 was also determined by past disturbances to the site. Disking and previous grading had impacted the entire site. In addition, the excavation of STP 1 resulted in a scant recovery of artifacts. Therefore, TU 1 was placed within the push pile in order to index artifact variation and sample the types of materials present. TU 1 was excavated in decimeter levels to a maximum depth of 40 centimeters below surface. Although artifacts were recovered in the 30 to 40 centimeter level, excavation was halted to due to a hard clay/DG subsoil and asphalt impasse. The eastern portion of TU 1 contained asphalt laid out over the sterile subsoil.

The soil from TU 1 was characterized as a loosely compact dark brown (10YR 4/2) clay until approximately 10 centimeters, overlaying a moderately compact to compact, grayish brown (10YR 5/2) clay loam. This second stratigraphic level ceased at approximately 40 centimeters below the surface at a very compact clay/DG and asphalt impasse. The north wall profile of TU 1 is illustrated in Figure 6.6–2 and pictured in Plate 6.6–3.

The excavation of TU 1 resulted in the recovery of both prehistoric and historic artifacts. However, TU 1 also resulted in the identification of modern trash throughout the test unit from the surface until the cessation of excavation at 40 centimeters.

Prehistoric Subsurface Recovery

Two of the eight STPs excavated at Site SDI-17,966/H were positive for prehistoric cultural material (STPs 1 and 7). STP 1 resulted in the recovery of 1.0 gram of marine shell, while STP 7 resulted in the recovery of 75.4 grams of marine shell. The majority of the shell was *chione* sp. and was recovered up to a depth of 20 centimeters. Shovel test pit recovery is summarized in Table 6.6–1 and detailed in Table 6.6–4.

The prehistoric recovery from TU 1 included two MGM flakes and 403.42 grams of marine shell ecofacts, including 1.2 grams of burnt shell (Table 6.6–1). The heaviest concentration of marine shell was recovered in the 20–30 centimeter level (276.4 grams), followed fairly evenly by levels at 30–40 centimeters (102.2 grams), 10–20 centimeters (60.8 grams), and 0–10 centimeters (64 grams). Excavation data for TU 1 is detailed in Table 6.6–5 and summarized by depth in Table 6.6–6.

Because modern trash was found intermixed with the prehistoric recovery, the prehistoric component of Site SDI-17,966/H lacks integrity and does not represent the original depositional context of the artifacts. The prehistoric subsurface recovery indicates that prehistoric activities at SDI-17,966/H included marine resource preparation and consumption and limited lithic tool production and maintenance.

Historic Subsurface Recovery

Three of the eight STPs excavated at Site SDI-17,966/H were positive for historic cultural material (STP 2, STP 5, and STP 7). Two unidentifiable ceramic fragments and one glass bottle/jar fragment were recovered from the STPs up to a depth of 20 centimeters (Table 6.6–10).

The excavation of TU 1 resulted in the recovery of 86 historic artifacts, most of which are construction materials. Historic artifacts were recovered from 0 to 40 centimeters below the surface, where sterile subsoil and an asphalt impasse were encountered. A detailed list of the artifacts recovered is provided in Table 6.6–11.

6.6.3 Laboratory Analysis

Laboratory analysis for Site SDI-17,966/H included the standard procedures described in Section 5.0 of this report. All artifacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-17,966/H included a total of 12 prehistoric lithic artifacts, 110.8 grams of ecofacts, and 135 historic artifacts, which are summarized in Tables 6.6–1 and 6.6–13 and detailed in Appendix IV.

Prehistoric Artifact Analysis

Lithic production waste accounted for the largest category of lithic artifacts, representing 91.66% (N=11) of the collection, and included ten flakes and one debitage piece made from locally available medium-grained metavolcanic material (Table 6.6–1). The remaining lithic collection consisted of one expedient tool (8.33%), a single utilized flake made from quartz. Lithic artifacts are listed by material in Table 6.6–7. Detailed material type and tool measurement data can be found in the artifact catalog (Appendix IV). Activities indicated by the artifacts recovered from the site include a limited amount of lithic tool production and maintenance.

The 691.6 grams of marine shell recovered from Site SDI-17,966/H is represented by mostly *chione* sp. Only 1.0 gram of the marine shell recovered appears to be burned.

Historic Artifact Analysis

The majority of the historic artifacts recovered from SDI-17,966/H could not be identified as to function, representing 62.22% (N=84) of the artifacts. The following functional categories were dominated by Construction Maintenance (21.48%; N=29) followed by Domestic Non-Expendable (8.89%; N=12), Domestic Expendable (2.96%; N=4), Domestic General (2.96%; N=4), and Industrial/Commercial (1.48%; N=2). Table 6.6–12 lists the historic recovery for SDI-17,966/H by functional categories. Observations in the field and in the laboratory seem to indicate that the historic component of SDI-17,966/H was most likely deposited by either commercial interests or previous residents of the property who dumped building materials and trash in this location.

Unfortunately, no absolute dates could be identified from the historic artifacts recovered. In addition, the presence of modern trash throughout the surface and subsurface portions of the site makes any dating of the site tenuous and problematic. Apart from the modern intrusions and the lack of absolute dates, the artifacts recovered appear to be from the mid 20th Century. Unfortunately, it is impossible to determine whether the historic artifacts and the modern trash were dumped at this location at the same time or in multiple episodes.

6.6.4 Prehistoric Discussion

The current testing program demonstrated that the prehistoric component of Site SDI-17,966/H consists of a sparse surface scatter of artifacts with an associated subsurface deposit, including predominately marine shell ecofacts. The surface scatter, which has been collected and analyzed, was widely scattered across the site. Shovel test pit and test unit excavations indicate that although a prehistoric subsurface deposit exists, it does not contain an extensive quantity or variety of artifacts. Based on the sparse nature of the surface scatter and the limited variety and quantity of material recovered from the prehistoric component of the site, the prehistoric component exhibits no additional research potential.

Due to the presence of prehistoric and modern refuse in the same contexts, it appears that the push-pile at the east end of the site is fairly recent and most likely resulted in the disturbance and deflation of any shallow prehistoric deposits over the rest of the site.

The prehistoric component of the site is interpreted as a limited-use area where activities included marine resource preparation and consumption, and lithic tool manufacture and maintenance. No temporally diagnostic artifacts, which would aid in identifying the site to a particular prehistoric time period, were recovered from the site. The limited quantity and range of cultural material suggests a limited use of the site. The research potential of the site has been exhausted through the current testing program and is affected by modern impacts.

6.6.5 Historic Discussion

Site SDI-17,966/H is located in close proximity to Site SDI-11,799H and may be associated with that site. However, the artifacts recovered from SDI-11,799H appear to pre-date Site SDI-17,966/H by approximately half a century. The historic component of Site SDI-17,966/H is interpreted as a trash dump that appears to date from the mid-20th century to the present. Unfortunately, no absolute dates were identified to place the site within a more specific historic time period. The limited quantity and range of cultural material suggests a limited use of the site. Due to the presence of historic and modern refuse in the same contexts, it appears that the push-pile at the east end of the site is a fairly recent event and most likely resulted in the disturbance and deflation of any shallow historic deposits over the rest of the site.

Due to the lack of absolute dates, an abundance of functionally identifiable artifacts, and previous disturbances, this site lacks any additional research potential. The research potential of the site has been exhausted through the current testing program.

6.6.6 Summary

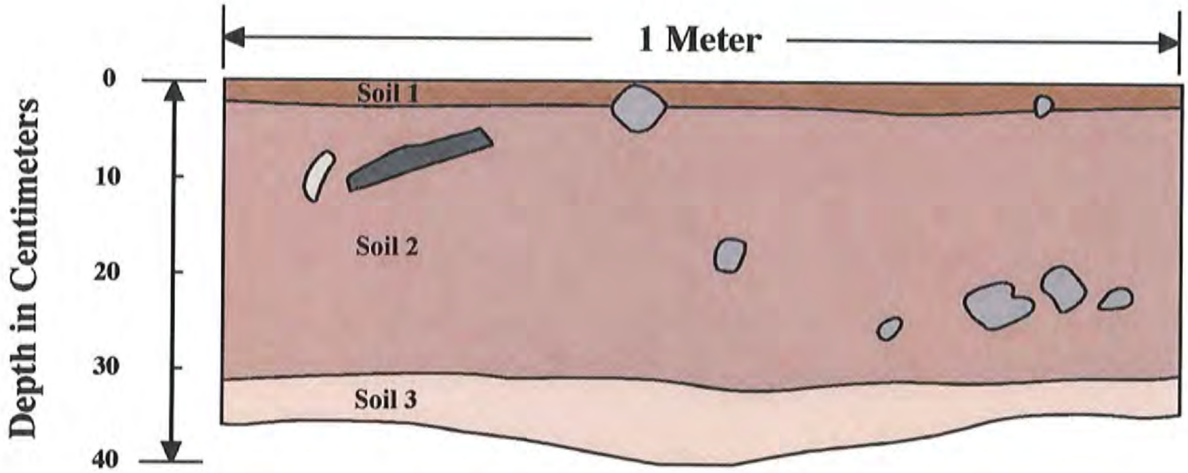
The overall site dimensions, as identified by the surface distribution of artifacts, measured approximately 81 meters (266 feet) north/south by 133 meters (436 feet) east/west and covered approximately 9,194 square meters (98,963 square feet).

The current testing program demonstrated that the prehistoric component of Site SDI-17,966/H consists of a sparse surface scatter of artifacts with an associated subsurface deposit, including predominately marine shell ecofacts. The prehistoric component of the site is interpreted as a limited-use area where activities included marine resource preparation and consumption, and lithic tool manufacture and maintenance. No temporally diagnostic artifacts, which would aid in identifying the site to a particular prehistoric time period, were recovered from the site. The historic component of the site is interpreted as a trash scatter and dumping area, which appears to date from the mid-20th century to the present. The historic component consists of a sporadic historic trash scatter and a trash push pile of debris.

Although Site SDI-17,966/H exhibits a sparse intact subsurface cultural deposit, the lack of variety and breadth indicates that it has no potential for buried cultural features and no additional research potential. However, the site did yield information during the current testing program. Therefore, according to the criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007), Site SDI-17,966/H is considered a significant cultural resource.

Figure 6.6–1
Excavation Location Map — Site SDI-17,966/H

(Deleted for Public Review; Bound Separately)



Soil Types

1	Very dark grayish brown (10YR 3/2) moderately compact clay loam
2	Dark grayish brown (10YR 4/2) compact clay
3	Light brownish gray (10YR 6/2) very compact clay loam

- Asphalt
- Concrete
- Cobble

Figure 6.6–2
North Wall Profile of Test Unit 1
SDI-17,966/H

The Otay Business Park Project

Plate 6.6–1 Overview of Site SDI-17,966/H, facing southwest.

Plate 6.6–2 Overview of Site SDI-17,966/H, facing southeast.
Note the elevated historic trash push pile with the tall grass.

Plate 6.6–3 North Wall of Test Unit 1, SDI-17,966/H.

TABLE 6.6–1
Prehistoric Artifact Summary, Site SDI-17,966/H

Recovery Category	Surface	Surface Scrape	Shovel Test	Test Units	Total	Percent
Ecofacts:						
Burnt Shell	-	1.0 g.	-	-	1.0 g.	
Shell	83.6 g.	26.2 g.	76.4 g.	504.4 g.	690.6 g.	
Expedient Tools:						
Utilized Flake(s)	1	-	-	-	1	8.33
Lithic Production Waste:						
Debitage	1	-	-	-	1	8.33
Flake(s)	6	2	-	2	10	83.33
Total:	8	2	-	2	12	99.99
Percent:	66.67	16.67	-	16.67	100.01	

**Rounded totals may not equal 100%*

TABLE 6.6–2
Prehistoric Surface Collection, Site SDI-17,966/H

Surface	Quantity	Artifact Type	Material Type	Catalog #
16	1	Flake	Medium-grained Metavolcanic	1
41	1	Flake	Medium-grained Metavolcanic	2
42	1	Flake	Medium-grained Metavolcanic	3
43	1	Flake	Medium-grained Metavolcanic	4
53	1	Flake	Medium-grained Metavolcanic	5
56	1	Flake	Medium-grained Metavolcanic	6
68	1	Debitage	Medium-grained Metavolcanic	7
70	1	Utilized Flake	Quartz	8
4	0.2g	Shell	Unsorted	17
4	0.5g	Burnt Shell	Unsorted	18

Surface	Quantity	Artifact Type	Material Type	Catalog #
5	6.7g	Shell	Unsorted	19
8	5.0g	Shell	Unsorted	20
9	1.7g	Shell	Unsorted	21
10	0.3g	Shell	Unsorted	22
12	1.1g	Shell	Unsorted	23
13	2.2g	Shell	Unsorted	24
14	0.7g	Shell	Unsorted	25
15	0.2g	Shell	Unsorted	26
15	0.1g	Burnt Shell	Unsorted	27
17	0.6g	Shell	Unsorted	28
18	0.6g	Shell	Unsorted	29
19	2.8g	Shell	Unsorted	30
22	0.8g	Shell	Unsorted	31
28	1.3g	Shell	Unsorted	32
31	1.5g	Shell	Unsorted	33
33	2.7g	Shell	Unsorted	34
34	1.3g	Shell	Unsorted	35
35	7.8g	Shell	Unsorted	36
36	2.3g	Shell	Unsorted	37
37	0.9g	Shell	Unsorted	38
38	2.0g	Shell	Unsorted	39
39	1.1g	Shell	Unsorted	40
40	3.9g	Shell	Unsorted	41
40	0.7g	Burnt Shell	Unsorted	42
43	0.5g	Shell	Unsorted	43
44	12.2g	Shell	Unsorted	44
46	3.3g	Shell	Unsorted	45
48	0.7g	Shell	Unsorted	46
48	1.0g	Burnt Shell	Unsorted	47
50	0.4g	Shell	Unsorted	48
51	0.0g	Shell	Unsorted	49
54	0.4g	Shell	Unsorted	50
55	2.5g	Shell	Unsorted	51

Surface	Quantity	Artifact Type	Material Type	Catalog #
58	2.5g	Shell	Unsorted	52
59	6.3g	Shell	Unsorted	53
60	4.3g	Shell	Unsorted	54
6	0.5g	Shell	Unsorted	57

<u>TABLE 6.6–3</u>
Prehistoric Surface Scrape Recovery, Site SDI-17,966/H

Surface Scrape	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-4	1	Flake	Medium-grained Metavolcanic	11
			Shell	Unsorted	12
			Burnt Shell	Unsorted	13
7	0-4	1	Flake	Medium-grained Metavolcanic	14
			Shell	Unsorted	15
			Burnt Shell	Unsorted	16

<u>TABLE 6.6–4</u>
Prehistoric Shovel Test Pit Excavations, Site SDI-17,966/H

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
7	0-10	21.0 g	Shell	Unsorted	9
	0-10	54.4 g	Shell	Unsorted	10
1	0-10	0.5 g	Shell	Unsorted	55
	10-20	0.5 g	Shell	Unsorted	56
	20-30	No Recovery			65
2	0-10	No Recovery			66
	10-20	No Recovery			67

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
	20-30	No Recovery			68
3	0-10	No Recovery			69
	10-20	No Recovery			70
	20-30	No Recovery			71
4	0-10	No Recovery			72
	10-20	No Recovery			73
	20-30	No Recovery			74
5	0-10	No Recovery			75
	10-20	No Recovery			76
	20-30	No Recovery			77
6	0-10	No Recovery			78
	10-20	No Recovery			79
	20-30	No Recovery			80
7	10-20	No Recovery			81
	20-30	No Recovery			82

TABLE 6.6–5

Prehistoric Excavations, TU 1, Site SDI-17,966/H

Test Unit	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	64.0g	Shell	Unsorted	58
	10-20	2	Flakes	Medium-grained Metavolcanic	59
		60.6g	Shell	Unsorted	60
		0.2g	Burnt Shell	Unsorted	61
	20-30	276.4g	Shell	Unsorted	62
		1.0g	Burnt Shell	Unsorted	63
	30-40	102.2g	Shell	Unsorted	64

<u>TABLE 6.6–6</u>
Prehistoric Summary by Depth, TU 1, Site SDI-17,966/H

Recovery Category	0-10	10-20	20-30	30-40	Total	Percent
Ecofacts:						
Burnt Shell	-	0.2g	1.0g	-	1.2g	
Shell	64.0g	60.6g	276.4g	102.2g	503.2g	
Lithic Production Waste:						
Flake(s)	-	2	-	-	2	100.00
Total:	-	2	-	-	2	100.00
Percent:		100.00			100.00	

<u>TABLE 6.6–7</u>
Lithic Material Distribution, Site SDI-17,966/H

Recovery Category	MGM	Quartz	Total	Percent
Expedient Tools:				
Utilized Flake(s)	-	1	1	8.33
Lithic Production Waste:				
Debitage	1	-	1	8.33
Flake(s)	10	-	10	83.33
Total:	11	1	12	99.99
Percent:	91.66	8.33	99.99	

**Rounded totals may not equal 100%*

TABLE 6.6–8
Historic Surface Collection, Site SDI-17,966/H

Surface Collection	Quantity	Artifact Type	Material Type	Catalog #
3	1	Insulator	Porcelain	1
5	1	Bolt	Steel	2
7	1	Fitting	Zinc (die-cast)?	3
11	1	Unknown	Porcelain	4
20	1	Unknown	Porcelain	5
23	1	Unknown	Steel	6
24	1	Unknown	Porcelain	7
25	1	Unknown	Earthenware	8
31	1	Insulator	Porcelain	9
43	1	Unknown	Porcelain	10
47	1	Unknown	Steel	11
48	1	Unknown	Rubber	12
51	1	Unknown	Porcelain	13
52	1	Unknown	Bronze	14
	1	Tile	Whiteware	15
54	1	Security Glass	Colorless	16
57	1	Tile	Whiteware	17
62	1	Other	Colorless	18
65	1	Tile	Porcelain	19
20	2	Tile	Whiteware	20
49	1	Manhole, Handhole/ pullbox	Composite	21
7	Prehistoric Only			42
8	Prehistoric Only			43
9	Prehistoric Only			44
10	Prehistoric Only			45
11	Prehistoric Only			46
12	Prehistoric Only			47

Surface Collection	Quantity	Artifact Type	Material Type	Catalog #
13	Prehistoric Only			48
14	Prehistoric Only			49
3	Prehistoric Only			50
4	Prehistoric Only			51
32	Prehistoric Only			52
33	Prehistoric Only			53
34	Prehistoric Only			54
35	Prehistoric Only			55
36	Prehistoric Only			56
37	Prehistoric Only			57
39	Prehistoric Only			58
40	Prehistoric Only			59
41	Prehistoric Only			60
42	Prehistoric Only			61
43	Prehistoric Only			62
44	Prehistoric Only			63
46	Prehistoric Only			64
47	Prehistoric Only			65
50	Prehistoric Only			66
52	Prehistoric Only			67
53	Prehistoric Only			68
55	Prehistoric Only			69
56	Prehistoric Only			70
57	Prehistoric Only			71
59	Prehistoric Only			72
60	Prehistoric Only			73
61	Prehistoric Only			74
62	Prehistoric Only			75
64	Prehistoric Only			76
65	Prehistoric Only			77
68	Prehistoric Only			78
69	Prehistoric Only			79

Surface Collection	Quantity	Artifact Type	Material Type	Catalog #
70	Prehistoric Only			80
1	1	Concrete	Concrete	81
2	1	Unknown	Composite	82
5	3	Unknown	Steel	83
6	1	Unknown	Composite	84
	1	Unknown	Unknown	85
15	1	Unknown	Colorless	86
	1	Unknown	Porcelain	87
16	1	Unknown	Unknown	88
17	1	Unknown	Colorless	89
18	Prehistoric Only			90
19	Prehistoric Only			91
21	1	Unknown	Porcelain	92
22	Prehistoric Only			93
26	Not an artifact			94
27	Not an artifact			95
28	Prehistoric Only			96
29	Not an artifact			97
30	Not an artifact			98
38	1	Unknown	Porcelain	99
48	1	Unknown	Aqua	100
	1	Unknown	Unknown	101
51	1	Unknown	Porcelain	102
58	1	Unknown	Steel	103
54	1	Unknown	Porcelain	104
63	1	Unknown	Composite	105
	1	Unknown	Composite	106
66	1	Tile	Porcelain	107
67	1	Unknown	Porcelain	108

TABLE 6.6–9
Historic Surface Scrape Recovery, Site SDI-17,966/H

Surface Scrape	Quantity	Artifact Type	Material Type	Catalog #
7	1	Ceramics	Porcelain	109
	1	Unknown	Unknown	110
1	Prehistoric Only			111

TABLE 6.6–10
Historic Shovel Test Pit Excavations, Site SDI-17,966/H

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	Prehistoric Only			114
	10-20				115
	20-30	No Recovery			116
2	0-10	1	Unknown Fragment(s)	Ceramic	22
	10-20	No Recovery			117
	20-30				118
3	0-10	No Recovery			119
	10-20				120
	20-30				121
4	0-10	No Recovery			122
	10-20				123
	20-30				124
5	0-10	1	Bottle/Jar Fragment(s)	Glass	125
	10-20	No Recovery			126
	20-30				127
6	0-10	Prehistoric Only			128
	10-20	No Recovery			129
	20-30				130

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
7	0-10	Prehistoric Only			112
	10-20	1	Unknown Fragment(s)	Ceramic	113

<u>TABLE 6.6–11</u>
Historic Excavations, TU 1, Site SDI-17,966/H

Test Unit	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	1	Insulator	Porcelain	23
		1	Unknown	Composite	24
		1	Access	Aluminum	25
		1	Unknown	Non-Ferrous Unknown	26
		1	Washer	Non-Ferrous Unknown	27
		1	Stake	Steel	28
		1	Nail	Steel	29
		1	Other	Fabric	30
	10-20	1	Water Sprinkler	Bronze	31
		1	Mounting plate?	Non-Ferrous Unknown	32
		1	Bolt	Steel	33
		1	Fitting	Zinc (Die-cast?)	34
		1	Other	Fabric	35
		1	Screw	Steel	36
		1	Staple	Steel	37
		1	Particleboard (1957+)	Composite	38
	20-30	1	Privacy Glass	Colorless	39
		3	Unknown	Porcelain	40
		1	Nail	Steel	41

Test Unit	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
	0-10	2	Bulk	Unknown	131
		1	Unknown	Unknown	132
		14	Bulk	Unknown	133
	10-20	7	Bulk	Unknown	134
		2	Unknown	Unknown	135
		6	Bulk	Unknown	136
		1	Unknown	Unknown	137
	20-30	3	Bulk	Unknown	138
		18	Bulk	Unknown	139
		8	Bulk	Unknown	140
	30-40	1	Bulk	Unknown	141
		2	Bulk	Unknown	142

TABLE 6.6–12
Summary of Historic Artifacts by Functional Category, Site SDI-17,966/H

Functional Category/ Artifact Type	Total	Percent*
Construction Maintenance	**29**	**21.48**
Building Materials, Concrete	1	
Building Materials, Unknown	7	
Building Materials, Particle Board	1	
Building Materials, Privacy Glass	1	
Building Materials, Security Glass	1	
Building Materials, Tile	6	
Fasteners	10	
Fixtures	2	
Domestic Expendable	**4**	**2.96**
Bottle/Jar glass fragment(s)	1	

Functional Category/ Artifact Type	Total	Percent*
Caps/lids/closures, pullring	1	
Other Packaging Goods, bag	2	
Domestic General	**4**	**2.96**
Electrical Systems, insulator	3	
Furnishings, Mirrored glass	1	
Domestic Non-Expendable	**12**	**8.89**
Ceramics, unknown	12	
Industrial/Commercial	**2**	**1.48**
Other, manhole/handhole fragment	1	
Machinery, fire water sprinkler	1	
Unknown	**84**	**62.22**
Ceramic fragment(s)	14	
Glass fragment(s)	43	
Metal fragment(s)	25	
Unknown fragment(s)	2	
Total:	**135**	**99.99**

TABLE 6.6–13
Summary of Temporally Diagnostic Historic Artifacts, Site SDI-17,966/H

Artifact Type	Date Range	No. of Entries
Nail, Round	1855 +	1
Grinnell Upright Spray Sprinkler	1881 +	1
Brooks Products El Monte manhole/handpull cover	1910+	1
Particleboard	1957+	1
Pull Ring	1965+	1

6.7 Site SDI-17,967

6.7.1 Site Description

Site SDI-17,967 is a resource extraction and processing site located down-slope and just east of SDI-17,964, along the west bank of an intermittent drainage within the southern portion of the project area (Figure 6.0–1). The site was identified during the current survey and subsequently tested for significance. Elevation at the site was approximately 500 feet AMSL. Disturbances in the area include past agricultural use, as well as the grading of two dirt roads: one that runs north/south along the east edge of the site, and another that runs east/west through the center of the site. Erosion was evident in the area. Ground visibility within the site was moderate to excellent. No bedrock outcrops, features, or darkened soils were observed. The general configuration of the resource is illustrated in Figure 6.7–1. The setting of the site is shown in Plate 6.7–1. Testing of Site SDI-17,967 consisted of collection and mapping of all surface artifacts and the excavation of 13 shovel test pits, and two test units.

6.7.2 Description of Field Investigations

Field investigations at Site SDI-17,967 were conducted using the standard methodologies described in Section 5.0. A total of 111 artifacts and 0.4 grams of ecofacts were recovered during the current investigation. A summary of artifact recovery from the site is presented in Table 6.7–1, while detailed provenience information in provided in the artifact catalog (Appendix IV).

Surface Recordation

The entire surface of the site was inspected for artifacts and features. All artifacts and excavations were mapped using a handheld GPS unit (Figure 6.7–1). The majority of the site surface was covered with dense tall grasses; subsequently, surface visibility was poor across most of the area. To account for poor ground visibility six surface scrapes were placed throughout the site (Figure 6.7–1).

All artifacts observed on the surface of the site were mapped and collected, the locations of which are illustrated in Figure 6.7–1. The surface artifacts were concentrated within the central portion of the site in and around the east/west oriented dirt road. The surface expression of the site measured approximately 46 meters (151 feet) east/west by 118 meters (387 feet) north/south covering approximately 4,546 square meters (48,933 square feet). The surface collection, summarized in Table 6.7–1 and detailed in Table 6.7–2, consisted of 75 artifacts. No artifacts or ecofacts were recovered from the surface scrapes. The total surface assemblage included three percussion tools, five precision tools, 12 expedient tools, and 55 pieces of lithic production waste.

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-17,967 was investigated through the excavation of a total of 13 STPs. Shovel test pits were excavated across the entire site, and were placed according to the locations of the surface artifacts. The locations of the STPs are shown in Figure 6.7–1. All shovel test pits were excavated in decimeter levels to a minimum depth of 30 centimeters, unless one sterile level or bedrock was encountered. Five of the 13 STPs excavated at Site SDI-17,967 were positive for cultural material. The excavation of the shovel tests resulted in the recovery of four flakes and one scraper (Table 6.7–1). Detailed excavation data for the STPs at Site SDI-17,967 is presented in Table 6.7–3.

Subsurface testing of Site SDI-17,967 continued with the excavation of two standard one-by-one meter test units. The test units were positioned to sample the areas of greatest potential, as identified by the STPs and surface collections. Test Unit 1 (TU 1) was placed in the central portion of the site, near STP 1. Test Unit 2 (TU 2) was placed in the central portion of the site, near STP 3. The locations of the test units are illustrated in Figure 6.7–1.

The test units were excavated in standard decimeter levels to subsoil, and all removed soils were sifted through one-eighth-inch mesh hardware cloth. Recovery from TU 1 consisted of 29 pieces of lithic production waste. Cultural material was recovered to a maximum depth of 30 centimeters in TU 1, where hard clay/decomposed granite (DG) was encountered. The test unit recovery is detailed in Table 6.7–4 and summarized by depth in Table 6.7–5.

The soil from TU 1 was characterized as a moderately compact dark grayish brown (10YR 4/2) loam to a depth of approximately 30 centimeters, overlying a very compact, grayish brown (10YR 5/2) clay loam subsoil with large cobble/DG inclusions to the maximum depth of the unit at 35 centimeters. A drawing of the north wall of TU 1 is presented in Figure 6.7–2. A color photograph of the north wall of TU 1 is provided in Plate 6.7–2.

Recovery from TU 2 consisted of two pieces of lithic production waste. Cultural material was recovered to a maximum depth of 20 centimeters in TU 2, where hard clay/decomposed granite (DG) was encountered. The test unit recovery is detailed in Table 6.7–4 and summarized by depth in Table 6.7–6.

The soil from TU 2 was characterized as a moderately compact, dark grayish brown (10YR 4/2) loam to a depth of approximately 42 centimeters, overlying a very compact, grayish brown (10YR 5/2) clay loam subsoil with large cobble/DG inclusions to the maximum depth of the unit at 20 centimeters. A drawing of the north wall of TU 2 is presented in Figure 6.7–3. A color photograph of the north wall of TU 2 is provided in Plate 6.7–3.

The subsurface expression of the site, as identified by the subsurface tests that produced artifacts, was smaller than the surface expression. The subsurface deposit at Site SDI-17,967 covers approximately 492 square meters (5,296 square feet).

<u>Figure 6.7–1</u>
Excavation Location Map — Site SDI-17,967

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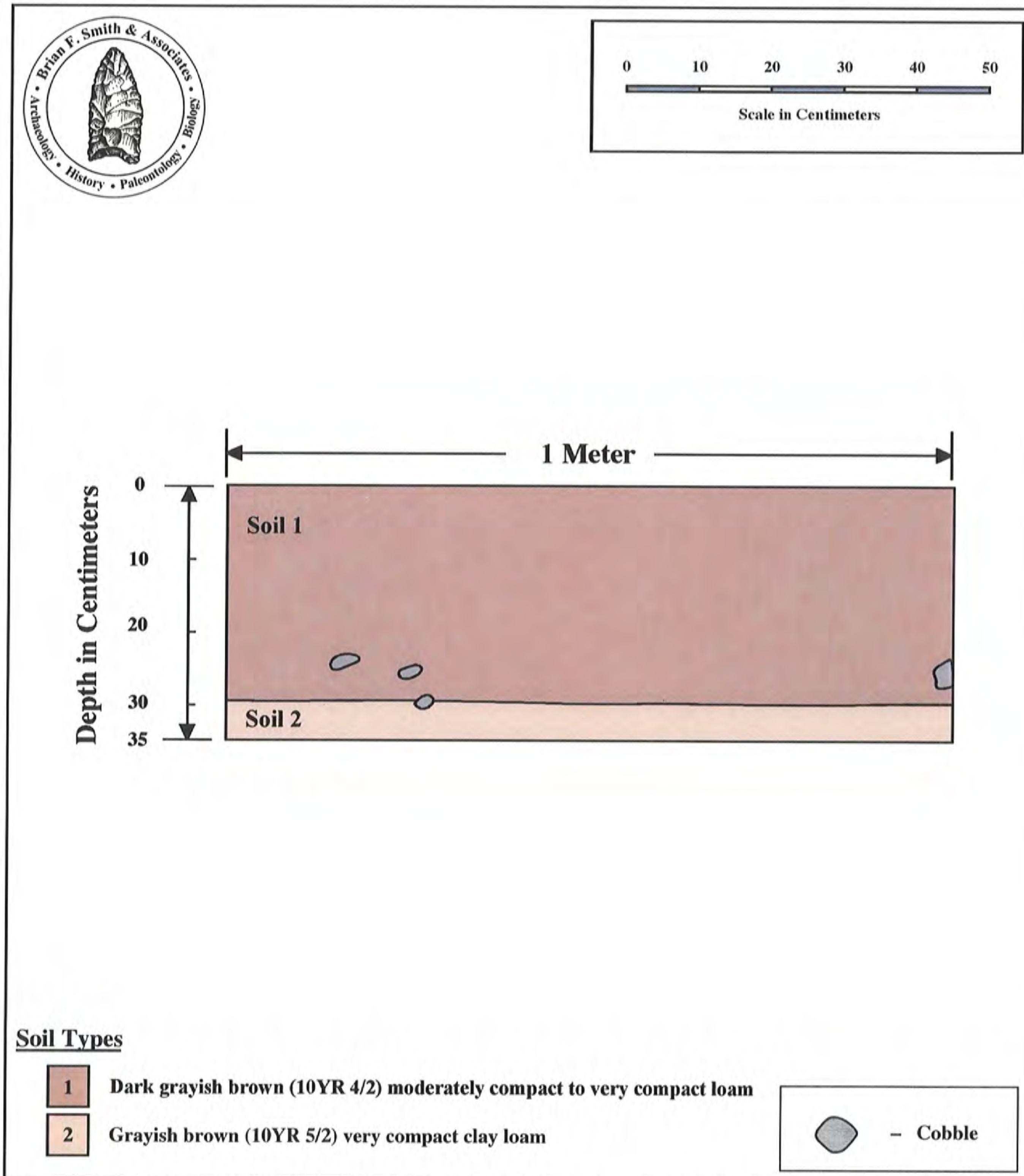
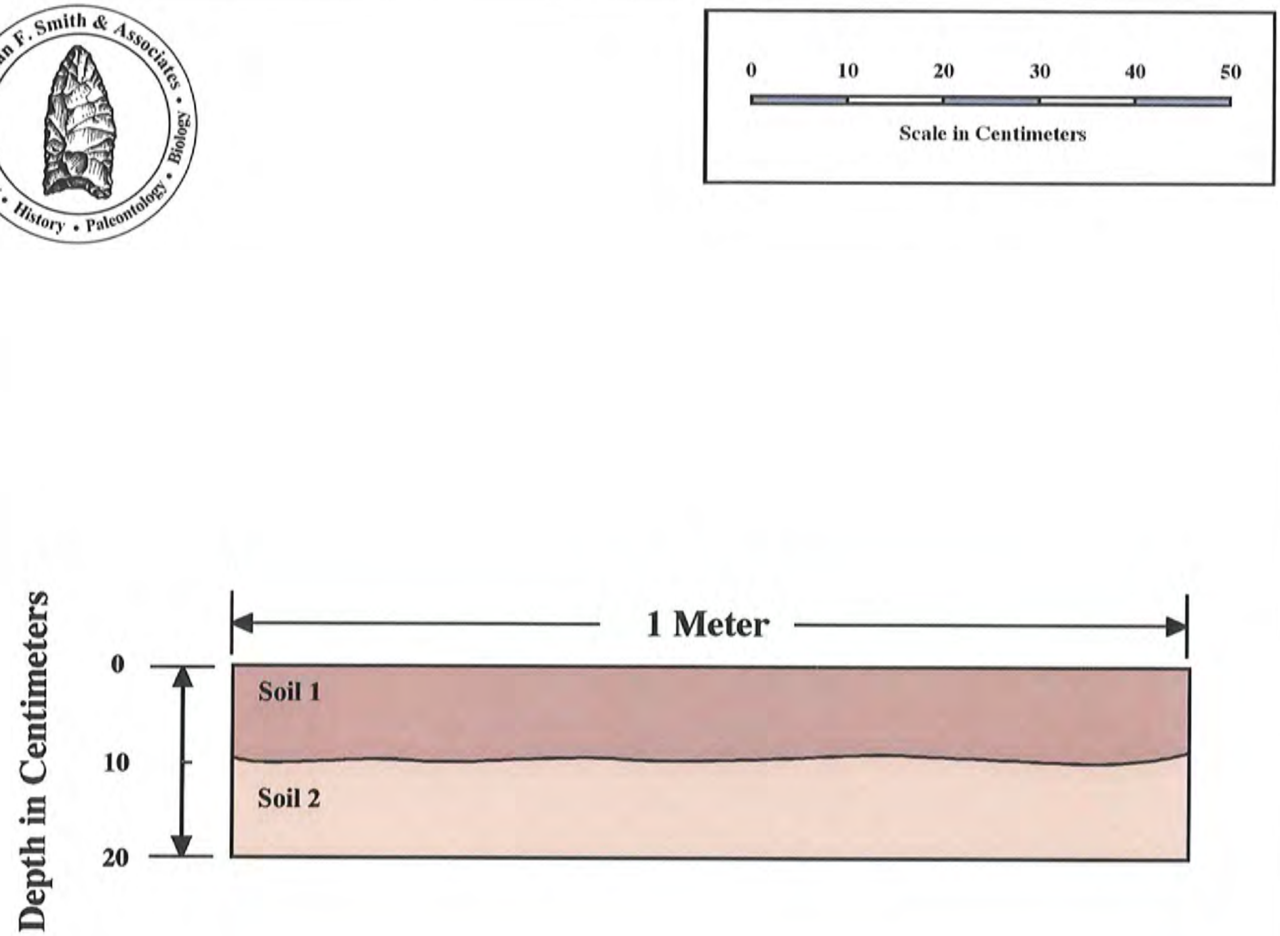


Figure 6.7–2
North Wall Profile of Test Unit 1
Site SDI-17,967
The Otay Business Park Project



Soil Types

1	**Dark grayish brown (10YR 4/2) moderately compact to very compact loam**
2	**Grayish brown (10YR 5/2) very compact clay loam**

Figure 6.7–3
North Wall Profile of Test Unit 2
Site SDI-17,967

The Otay Business Park Project

Plate 6.7–1 Overview of Site SDI-17,967, facing south.

Plate 6.7–2 Test Unit 1 North Wall, Site SDI-17,967.

Plate 6.7–3 Test Unit 2 North Wall, Site SDI-17,967.

6.7.3 Laboratory Analysis

Laboratory analysis for Site SDI-17,967 included the standard procedures described in Section 5.0 of this report. All artifacts and ecofacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-17,967, including 111 artifacts and 0.4 grams of ecofacts, is summarized in Table 6.7–1 and detailed in Appendix IV. The 0.4 grams of bone could not be identified to species.

Lithic Artifact Analysis

Lithic production waste accounted for the largest category of lithic artifacts, representing 81.08% (N=90) of the lithic artifact collection, and included 70 flakes, 18 pieces of debitage, and two cores. The remaining lithic collection consisted of 12 expedient tools (10.81%), six precision tools (5.4%), and three percussion tools (2.7%). Activities indicated by the artifacts recovered from the site include procurement, processing, and maintenance of lithic tools.

The lithic artifact collection included a small range of material types, all of which are locally available metavolcanics; medium-grained metavolcanics 84.4% (N=93) and fine-grained metavolcanics 15.5 (N=18). The lithic material distribution of the artifact assemblage is presented in Table 6.7–6.

6.7.4 Discussion

The testing program demonstrated that Site SDI-17,967 consists of a moderate prehistoric surface artifact scatter and moderately deep subsurface deposit that yielded 111 artifacts. The overall site dimensions, as identified by the surface distribution of artifacts, measured approximately 46 meters (151 feet) east/west by 118 meters (387 feet) north/south over approximately 4,546 square meters (48,933 square feet). The surface scatter, which has been collected and analyzed, was moderately dense and evenly scattered across the site. Test unit and shovel test pit excavations indicate that the subsurface deposit, albeit very isolated, extends to a depth of 30 centimeters. There is little variety in the artifact types recovered and the sparse ecofact recovery of bone could not be identified to species. Site SDI-17,967 does not appear to exhibit additional research potential.

The site is interpreted as lithic resource extraction, processing, and maintenance site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. Although testing indicated the presence of a shallow subsurface deposit, it appears to be very isolated with little research potential.

6.7.5 Summary

The analysis of the prehistoric cultural materials recovered from Site SDI-17,967 revealed an isolated and shallow cultural deposit at the site extending to a depth of 30 centimeters. The recovered lithic artifacts indicate that site activities were focused on the procurement, processing, and maintenance of lithic tools.

Due to the limited and specialized nature of Site SDI-17,967, it is unlikely to produce buried cultural features and therefore, lacks additional research potential. However, the site did yield information during the testing program. Therefore, Site SDI-17,967 is considered a significant resource according to criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007).

TABLE 6.7–1
Artifact Summary, Site SDI-17,967

Recovery Category	Surface	Shovel Test	Test Unit	Total	Percent
Ecofacts:					
Bone	-	0.2 g	-	0.2 g	
Expedient Tools:					
Utilized Flake(s)	12	-	-	12	10.811
Lithic Production Waste:					
Core(s)	2	-	-	2	1.8
Debitage	12	-	6	18	16.23
Flake(s)	41	4	25	70	63.06
Percussion Tools:					
Hammerstone(s)	3	-	-	3	2.7
Precision Tools:					
Cobble Tool(s)	1	-	-	1	0.9
Core Tool(s)	1	-	-	1	0.9
Flake Scraper(s)	1	-	-	1	0.9
Retouched Flake(s)	1	-	-	1	0.9
Scraper(s)	1	1	-	2	1.8
Total:	75	5	31	111	100.00
Percent:	67.57	4.50	27.93	100.00	

**Rounded numbers may not total 100%*

TABLE 6.7–2
Surface Collection, Site SDI-17,967

Surface Collection	Quantity	Artifact Type	Material Type	Catalog #
1	1	Core	Medium-grained Metavolcanic	1
2	1	Utilized Flake	Fine-grained Metavolcanic	2
3	1	Hammerstone, circular	Medium-grained Metavolcanic	3
4	1	Debitage	Medium-grained Metavolcanic	4
4	1	Flake	Medium-grained Metavolcanic	5
5	1	Flake	Medium-grained Metavolcanic	6
7	1	Utilized Flake	Medium-grained Metavolcanic	7
8	1	Utilized Flake	Medium-grained Metavolcanic	8
9	1	Core Tool	Medium-grained Metavolcanic	9
10	1	Utilized Flake	Fine-grained Metavolcanic	10
11	1	Flake	Medium-grained Metavolcanic	11
12	1	Utilized Flake	Medium-grained Metavolcanic	12
13	1	Utilized Flake	Medium-grained Metavolcanic	13
	1	Flake	Medium-grained Metavolcanic	14
15	1	Flake	Medium-grained Metavolcanic	15
16	1	Core	Medium-grained Metavolcanic	16
17	1	Flake	Medium-grained Metavolcanic	17
18	1	Utilized Flake	Medium-grained Metavolcanic	18
	1	Utilized Flake	Medium-grained Metavolcanic	19
	1	Flake	Medium-grained Metavolcanic	20
19	1	Flake	Fine-grained Metavolcanic	21
20	1	Utilized Flake	Medium-grained Metavolcanic	22
	1	Flake	Medium-grained Metavolcanic	23
21	1	Cobble Tool	Medium-grained Metavolcanic	24
22	1	Hammerstone	Medium-grained Metavolcanic	25
23	1	Hammerstone, spherical	Fine-grained Metavolcanic	26
	1	Debitage	Fine-grained Metavolcanic	27
	1	Flake	Medium-grained Metavolcanic	28
25	1	Flake	Medium-grained Metavolcanic	29

Surface Collection	Quantity	Artifact Type	Material Type	Catalog #
26	1	Flake	Fine-grained Metavolcanic	30
27	1	Flake	Medium-grained Metavolcanic	31
28	1	Scraper	Fine-grained Metavolcanic	32
	4	Debitage	Medium-grained Metavolcanic	33
	6	Flakes	Medium-grained Metavolcanic	34
29	1	Flake	Medium-grained Metavolcanic	35
30	1	Flake	Fine-grained Metavolcanic	36
	2	Flakes	Medium-grained Metavolcanic	37
31	2	Debitage	Medium-grained Metavolcanic	38
	3	Flakes	Medium-grained Metavolcanic	39
32	2	Debitage	Medium-grained Metavolcanic	40
	9	Flakes	Medium-grained Metavolcanic	41
33	1	Utilized Flake	Fine-grained Metavolcanic	42
	1	Utilized Flake	Medium-grained Metavolcanic	43
	1	Flake	Medium-grained Metavolcanic	44
35	1	Flake Scraper	Fine-grained Metavolcanic	45
	1	Flake	Fine-grained Metavolcanic	46
	1	Flake	Medium-grained Metavolcanic	47
36	1	Debitage	Medium-grained Metavolcanic	48
37	1	Utilized Flake	Medium-grained Metavolcanic	49
38	1	Utilized Flake	Medium-grained Metavolcanic	50
	1	Flake	Medium-grained Metavolcanic	51
39	2	Flakes	Medium-grained Metavolcanic	52
40	1	Retouched Flake	Medium-grained Metavolcanic	53

TABLE 6.7–3
Shovel Test Pit Excavation Data, Site SDI-17,967

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	No Recovery			54
	10-20	1	Flake	Fine-grained metavolcanic	55
	20-30	No Recovery			56
2	0-10	No Recovery			57
	10-20	1	Flake	Medium-grained metavolcanic	58
	20-30	No Recovery			59
3	0-10	No Recovery			60
	10-20	No Recovery			61
	20-30	No Recovery			62
	30-40	No Recovery			63
4	0-10	No Recovery			64
	10-20	No Recovery			65
	20-30	1	Flake	Fine-grained metavolcanic	66
	30-40	1	Scraper	Medium-grained metavolcanic	67
	40-50	No Recovery			68
5	0-10	1	Flake	Medium-grained metavolcanic	69
	10-20	No Recovery			70
	20-30	No Recovery			71
6	0-10	No Recovery			72
	10-20	No Recovery			73
	20-30	No Recovery			74
7	0-10	No Recovery			75
	10-20	No Recovery			76
	20-30	No Recovery			77
8	0-10	0.2 g.	Fragments	Bone	78
	10-20	No Recovery			79
	20-30	No Recovery			80

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
9	0-10	No Recovery			81
	10-20	No Recovery			82
	20-30	No Recovery			83
10	0-10	No Recovery			84
	10-20	No Recovery			85
	20-30	No Recovery			86
11	0-10	No Recovery			87
	10-20	No Recovery			88
	20-30	No Recovery			89
12	0-10	No Recovery			90
	10-20	No Recovery			91
	20-30	No Recovery			92
13	0-10	No Recovery			93
	10-20	No Recovery			94
	20-30	No Recovery			95

TABLE 6.7–4
Test Unit Excavation Data, Site SDI-17,967

Test Unit	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	1	Flake	Fine-grained Metavolcanic	96
		4	Debitage	Medium-grained Metavolcanic	97
		10	Flakes	Medium-grained Metavolcanic	98
	10-20	2	Flakes	Fine-grained Metavolcanic	99
		5	Flakes	Medium-grained Metavolcanic	100
	20-30	1	Flake	Fine-grained Metavolcanic	101
		2	Debitage	Medium-grained Metavolcanic	102
		4	Flakes	Medium-grained Metavolcanic	103
	30-40	No Recovery			104
2	0-10	No Recovery			105
	10-20	1	Flake	Fine-grained Metavolcanic	106
		1	Flake	Medium-grained Metavolcanic	107

TABLE 6.7–5
Summary by Depth, TU 1, Site SDI-17,967

Recovery Category	0-10	10-20	20-30	Total	Percent
Lithic Production Waste:					
Debitage	4	-	2	6	19.35
Flake(s)	11	9	5	25	80.65
Total:	15	9	7	31	100.00
Percent:	48.39	29.03	22.58	100.00	

**Rounded numbers may not total 100%*

TABLE 6.7–6
Lithic Material Distribution, Site SDI-17,967

Recovery Category	FGM	MGM	Total	Percent
Expedient Tools:				
Utilized Flake(s)	3	9	12	10.81
Lithic Production Waste:				
Core(s)	-	2	2	1.8
Debitage	1	17	18	16.22
Flake(s)	11	59	70	63.06
Percussion Tools:				
Hammerstone(s)	1	2	3	2.7
Precision Tools:				
Cobble Tool(s)	-	1	1	0.9
Core Tool(s)	-	1	1	0.9
Flake Scraper(s)	1	-	1	0.9
Retouched Flake(s)	-	1	1	0.9
Scraper(s)	1	1	2	1.8
Total:	18	93	111	99.99
Percent:	15.60	84.40	100.00	

**Rounded numbers may not total 100%*

6.8 Site SDI-8074

6.8.1 Site Description

Site SDI-8074 was first recorded in 1974 and described as a collection of possible hearths and a moderate lithic scatter, including lithic production waste, precision tools, and groundstone tools (Carrico 1974). The site was relocated in 1990 *sans* any evidence of groundstone or hearths (Robbins-Wade and Gross 1990). The current survey failed to relocate this site. However, because SDI-8074 has never been tested for significance and the extremely poor ground visibility in the area, the location where the site had been previously recorded was tested for significance during the current investigation. The site is located on a relatively level, slightly southwest-sloping, broad knoll in the northeast portion of the project area (Figure 6.0–1). Elevation at the site is approximately 500 feet AMSL. Disturbances in the area include disking activities associated with past agricultural practices: erosion has also affected the site. Dense vegetation in the area, consisting of tall grasses, resulted in very poor ground visibility. No bedrock outcrops, features, or darkened soils were observed. The general configuration of the resource is shown in Figure 6.8–1. The setting of the site is shown in Plate 6.8–1. Testing of Site SDI-8074 consisted of a surface collection and the excavation of five surface scrapes and 11 shovel test pits (STP).

6.8.2 Description of Field Investigations

Field investigations at Site SDI-8074 were conducted using the standard methodologies described in Section 5.0. No artifacts were recovered during the current investigation. Although no artifacts were recovered from the testing program, an artifact catalog documenting all investigations is provided in Appendix IV.

<u>*Surface Recordation*</u>

Although ground visibility was very poor throughout the site, the entire surface area was inspected for artifacts and features. To account for poor ground visibility, five surface scrapes were placed throughout the site (Figure 6.8–1). No artifacts were recovered as result of the surface collection or the surface scrapes. The locations of the surface scrapes are shown in Figure 6.8–1.

<u>*Subsurface Excavation*</u>

The potential for subsurface cultural deposits at Site SDI-8074 was investigated through the excavation of a total of 11 STPs. Shovel test pits were excavated across the entire site, and were placed according to the field methodology discussed in Section 5.0. The locations of the STPs are shown in Figure 6.8–1. All shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters, unless a culturally sterile level or bedrock was encountered. None of the 11 STPs excavated at Site SDI-8074 was positive for cultural material.

6.8.3 Laboratory Analysis

Although no artifacts were recovered from the testing program, an artifact catalog documenting all investigations is provided in Appendix IV.

6.8.4 Discussion and Summary

Site SDI-8074 exhibits no surface or subsurface cultural deposits and no potential for buried cultural features and no additional research potential. The research potential of this site has been exhausted with the current investigation. Therefore, according to the criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007), Site SDI-8074 is not considered a significant cultural resource.

Plate 6.8–1 Overview of Site SDI-8074, facing southwest.

<u>Figure 6.8–1</u>

Excavation Location Map — Site SDI-8074

(Deleted for Public Review; Bound Separately)

6.9 Site SDI-8075

6.9.1 Site Description

Site SDI-8075 was first recorded in 1974 and described as a thin lithic scatter, including one flake scraper, one utilized flake, and two flakes (Carrico 1974). The site was relocated in 1990 and noted as a small, light density lithic scatter (Robbins-Wade and Gross 1990). The current survey relocated the site again as a light density lithic scatter, and subsequently tested the site for significance. The site is located on a relatively level, slightly southwest-sloping, broad knoll in the eastern portion of the project area (Figure 6.0–1). The site is situated at approximately 510 feet AMSL. Disturbances include disking activities associated with past agricultural practices and erosion. Heavy vegetation in the area, consisting of dense, tall grasses, resulted in very poor ground visibility. No bedrock outcrops, features, or darkened soils were observed. The general configuration of the resource is illustrated in Figure 6.9–1. The setting of the site is shown in Plate 6.9–1. Testing of Site SDI-8075 consisted of a surface collection and the excavation of five surface scrapes and 11 shovel test pits (STPs).

6.9.2 Description of Field Investigations

Field investigations at Site SDI-8075 were conducted using the standard methodologies described in Section 5.0. A total of four artifacts were recovered during the current investigation. A summary of artifact recovery from the site is presented in Table 6.9–1, while detailed provenience information is provided in the artifact catalog (Appendix IV).

Surface Recordation

The entire surface of the site was inspected for artifacts and features. All artifacts and excavations were mapped using a handheld GPS unit (Figure 6.9–1). Off-road portions of the site surface were covered with dense, tall grasses; subsequently, surface visibility was poor across these areas. To account for poor ground visibility, five surface scrapes were placed in the off-road areas (Figure 6.9–1).

All artifacts observed on the surface of the site were mapped and collected, the locations of which are illustrated in Figure 6.9–1. The surface artifacts were widely scattered throughout the site area. The surface collection, summarized in Table 6.9–1 and detailed in Table 6.9–2, consisted of four artifacts. The assemblage included one expedient tool and three pieces of lithic production waste. The surface scrapes failed to locate any artifacts or ecofacts.

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-8075 was investigated through the excavation of a total of 11 STPs. Shovel test pits were excavated across the entire site, and were placed according to the locations of the surface artifacts and the field methodology described in Section 5.0. The locations of the STPs are shown in Figure 6.9–1. All shovel test pits were excavated in decimeter levels to a minimum depth of 30 centimeters, unless one sterile level or bedrock was encountered. None of the 11 STPs excavated at Site SDI-8075 were positive for cultural material.

6.9.3 Laboratory Analysis

Laboratory analysis for Site SDI-8075 included the standard procedures described in Section 5.0 of this report. All artifacts recovered from the field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-8075 included a total of four lithic artifacts, summarized in Table 6.9–1 and detailed in Appendix IV.

Lithic Artifact Analysis

Lithic production waste accounted for the largest category of lithic artifacts, representing 75% (N=3) of the lithic artifact collection, including one flake, one piece of debitage, and one core, all made from locally available medium-grained metavolcanic material. The remaining lithic collection consisted of a single piece of utilized debitage made from fine-grained metavolcanic material. The lithic material distribution of the artifacts is detailed in Table 6.9–3.

6.9.4 Discussion

The current testing program demonstrated that Site SDI-8075 consists of a sparse surface scatter of artifacts with no associated subsurface deposit. The surface scatter, which has been collected and analyzed, was widely scattered across the site. Shovel test pit excavations indicated that no subsurface deposits are located at Site SDI-8075. The artifacts collected were all manufactured from locally available materials. Based on the sparse nature of the surface scatter and the limited variety and quantity of material recovered from the site, the site exhibits no additional research potential.

The site is interpreted as a small lithic scatter. The limited variety and range of artifacts suggests a limited use of the site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered. The research potential of the site has been exhausted through the current testing program.

6.9.5 Summary

Analysis of cultural materials recovered from Site SDI-8075 revealed a sparse surface scatter of artifacts with no associated subsurface deposit. The recovered materials indicate that site activities were focused on lithic production of metavolcanic materials.

Site SDI-8075 exhibits no intact subsurface cultural deposits and no potential for buried cultural features. The site exhibits no unique elements and no additional research potential. However, the site did yield information during the testing program. Therefore, according to the criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007), Site SDI-8075 is considered a significant cultural resource.

<u>Figure 6.9–1</u>
Excavation Location Map — Site SDI-8075

(Deleted for Public Review; Bound Separately)

Plate 6.9–1 Overview of Site SDI-8075, facing south.

TABLE 6.9–1
Artifact Summary, Site SDI-8075

Recovery Category	Surface	Surface scrape	Shovel Test	Total	Percent
Expedient Tools:					
Utilized Debitage	1	-	-	1	25.00
Lithic Production Waste:					
Core(s)	1	-	-	1	25.00
Debitage	1	-	-	1	25.00
Flake(s)	1	-	-	1	25.00
Total:	4	0	0	4	100.00
Percent:	100.00			100.00	

TABLE 6.9–2
Surface Collection, Site SDI-8075

Surface Collection	Quantity	Artifact Type	Material Type	Catalog #
1	1	Utilized Debitage	Fine-grained Metavolcanic	1
2	1	Core	Medium-grained Metavolcanic	2
6	1	Debitage	Medium-grained Metavolcanic	3
7	1	Flake	Medium-grained Metavolcanic	4

TABLE 6.9–3
Lithic Material Distribution, Site SDI-8075

Recovery Category	FGM	MGM	Total	Percent
Expedient Tools:				
Utilized Debitage	1	-	1	25.00
Lithic Production Waste:				
Core(s)	-	1	1	25.00
Debitage	-	1	1	25.00
Flake(s)	-	1	1	25.00
Total:	1	3	4	100.00
Percent:	25.00	75.00	100.00	

6.10 Site SDI-8077

6.10.1 Site Description

Site SDI-8077 was first recorded by Carrico in 1974 and was described as a thin lithic scatter. The site was investigated in 1990 and was noted as a small, light density lithic scatter that had been disturbed by plowing (Robbins-Wade and Gross 1990). BFSA relocated the site during the current investigation and expanded the site boundaries. The site is located on the top and north-facing slope of a small mesa in the central portion of the project area (Figure 6.0–1). The site is situated at approximately 522 feet AMSL. Disturbances include agricultural disking practices, erosion, and grading for multiple dirt roads. Off-road enthusiasts and United States Border Patrol use these roads. Ground visibility within the roads was excellent; however, off-road ground visibility was very poor due to vegetation consisting of dense, tall, introduced grasses and weeds. No bedrock outcrops, features, or darkened soils were observed. Cobbles were found on the surface of the site. The general configuration of the resource is shown in Figure 6.10–1 and the setting is shown in Plates 6.10–1 and 6.10–2. Testing of Site SDI-8077 consisted of a surface collection and the excavation of six surface scrapes, 11 shovel test pits (STPs), and one standard test unit (TU).

6.10.2 Description of Field Investigations

Field investigations at Site SDI-8077 were conducted using the standard methodologies described in Section 5.0. A total of 145 artifacts were recovered during the current investigation. A summary of artifact recovery from the site is presented in Table 6.10–1, while detailed provenience information is provided in the artifact catalog (Appendix IV).

<u>*Surface Recordation*</u>

The entire surface of the site was inspected for artifacts and features. All artifacts and excavations were mapped using a handheld GPS unit (Figure 6.10–1). Off-road portions of the site surface were covered with dense tall grasses; subsequently, surface visibility was poor across these areas. To account for poor ground visibility, six surface scrapes were placed off-road (Figure 6.10–1).

All artifacts observed on the surface were mapped and collected, the locations of which are illustrated in Figure 6.10–1. The surface artifacts were widely scattered throughout the site area. The surface collection, summarized in Table 6.10–1 and detailed in Table 6.10–2, consisted of 128 artifacts. The surface expression of the site measured approximately 175 meters (574 feet) north/south by 49 meters (161 feet) east/west, covering approximately 8,529 square meters (27,982 square feet). The assemblage included three percussion tools, five expedient tools, 27 precision tools, and 93 pieces of lithic production waste. The surface scrape recovery, summarized in Table 6.10–1 and detailed in Table 6.10–3, consisted of five medium-grained metavolcanic flakes.

<u>Subsurface Excavation</u>

The potential for subsurface cultural deposits at Site SDI-8077 was investigated through the excavation of a 11 STPs. Shovel test pits were excavated across the entire site, and were placed according to the locations of the surface artifacts. The locations of the STPs are shown in Figure 6.10–1. All shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters. Four of the 11 STPs were positive for cultural material (STPs 1, 2, 3, and 7). The STPs resulted in the recovery of nine flakes, two of which were manufactured from fine-grained metavolcanic material. The remaining seven flakes were manufactured from medium-grained metavolcanic material. Detailed excavation data for the STPs at Site SDI-8077 is presented in Table 6.2–4.

Subsurface testing of Site SDI-8077 continued with the excavation of one standard one-by-one meter test unit. The test unit was positioned to sample the area of greatest potential to produce a subsurface deposit, as identified by the STPs and surface collections. Test Unit 1 (TU 1) was placed in the central portion of the site, near STP 1. The location of TU 1 is illustrated in Figure 6.10–1.

The test unit was excavated in standard decimeter levels to subsoil, and all removed soils were sifted through one-eighth-inch mesh hardware cloth. Recovery from TU 1 consisted of three medium-grained metavolcanic flakes from the 10-20 centimeter level. Cultural material was recovered to a maximum depth of 20 centimeters in TU 1. Hard clay/decomposed granite (DG) was encountered at 28 centimeters below the surface. The test unit recovery is summarized in Table 6.10–1 and detailed in Table 6.10–5.

The soil from TU 1 was characterized as a moderately compact to very compact dark grayish brown (10YR 4/2) loam to a depth of approximately 28 centimeters, overlying a very compact, grayish brown (10YR 5/2) clay loam subsoil with large cobble/DG inclusions to the maximum depth of the unit at 30 centimeters. The north wall of TU 1 is illustrated in Figure 6.10–2 and pictured in Plate 6.10–2.

6.10.3 Laboratory Analysis

Laboratory analysis for Site SDI-8077 included the standard procedures described in Section 5.0 of this report. All artifacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-8077 included a total of 145 lithic artifacts, summarized in Table 6.10–1 and detailed in Appendix IV.

<u>Lithic Artifact Analysis</u>

Lithic production waste , including 92 flakes, 15 pieces of debitage, and three cores, accounted for the largest category of lithic artifacts, representing 75.86% (N=110) of the lithic artifact collection. All of these items were made from locally available fine- and medium-grained metavolcanic material. The remaining lithic collection consisted of three percussion tools (2.07%), five expedient tools (3.45%), 27 precision tools (18.63%), all of which were made from locally available fine- and medium-grained metavolcanic material.

All of the recovered lithic material from SDI-8077 was manufactured from locally available fine- and medium-grained metavolcanic material. Medium-grained metavolcanic material was used for the majority of lithic tool production accounting for 88.97% (N=129) of the assemblage, while the remaining 11.03% (N=16) of artifacts were manufactured from fine-grained metavolcanics. A summary of all lithic artifacts by material is shown below in Table 6.10–6. Detailed material type and tool measurement data can be found in the artifact catalog (Appendix IV). Activities indicated by the artifacts recovered from the site include raw material procurement and lithic tool production and maintenance.

6.10.4 Discussion

The testing demonstrated that Site SDI-8077 consists of a moderate prehistoric surface artifact scatter and moderately deep subsurface deposit that yielded 145 artifacts. As a result of the current survey and testing programs, the overall site dimensions for SDI-8077 have been redefined from the original site recordings. The overall site dimensions, as identified by the surface distribution of artifacts, measured approximately 175 meters (574 feet) north/south by 49 meters (161 feet) east/west, covering approximately 8,529 square meters (27,982 square feet). The surface scatter, which has been collected and analyzed, was scattered across the site. Test unit and shovel test excavations indicate that the subsurface deposit, albeit very isolated and shallow, extends to a depth of on;ly20 centimeters. There is little variety in the artifact types recovered and a complete absence of ecofacts. Site SDI-8077 does not appear to exhibit additional research potential.

The site is interpreted as lithic production site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. Although testing indicates a shallow subsurface deposit, it appears to be very isolated with little research potential.

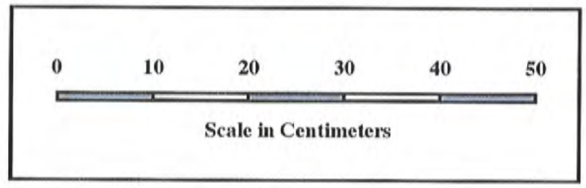
6.10.5 Summary

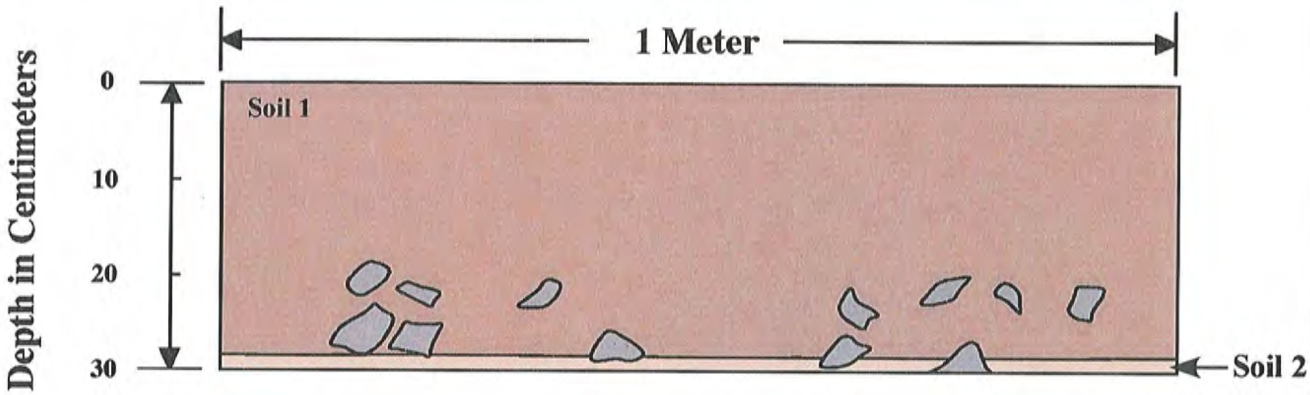
Analysis of the prehistoric cultural material recovered from Site SDI-8077 revealed an isolated and shallow cultural deposit that extended to a depth of 20 centimeters. Recovered lithic artifacts indicate that site activities were focused on lithic tool production.

Site SDI-8077 is unlikely to produce buried cultural features and, therefore, lacks additional research potential. However, the site did yield information during the testing program. Therefore, Site SDI-8077 is considered a significant resource according to criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007)..

<u>Figure 6.10–1</u>
Excavation Location Map — Site SDI-8077

(Deleted for Public Review; Bound Separately)





Soil Types

1	**Dark grayish brown (10YR 4/2) moderately compact to very compact loam**
2	**Grayish brown (10YR 5/2) very compact clay loam with cobble decomposing granite**

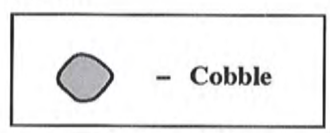


Figure 6.10–2
North Wall Profile of Test Unit 1
Site SDI-8077

The Otay Business Park Project

Plate 6.10–1 Overview of the mesa-top portion of Site SDI-8077, facing north.

Plate 6.10–2 Overview of the north-facing slope of the mesa portion of Site SDI-8077, facing south.

Plate 6.10–1 Test Unit 1, Site SDI-8077.

TABLE 6.10–1
Artifact Summary, Site SDI-8077

Recovery Category	Surface	Surface scrape	Shovel Test	Test Units	Total	Percent
Expedient Tools:						
Utilized Debitage	1	-	-	-	1	0.69
Utilized Flake(s)	4	-	-	-	4	2.76
Lithic Production Waste:						
Core(s)	3	-	-	-	3	2.07
Debitage	15	-	-	-	15	10.34
Flake(s)	75	5	9	3	92	63.45
Percussion Tools:						
Hammerstone(s)	3	-	-	-	3	2.07
Precision Tools:						
Cobble Scraper(s)	2	-	-	-	2	1.38
Cobble Tools(s)	3	-	-	-	3	2.07
Core Tool(s)	4	-	-	-	4	2.76
Flake Scraper(s)	1	-	-	-	1	0.69
Retouched Debitage	2	-	-	-	2	1.38
Retouched Flake(s)	10	-	-	-	10	6.10
Scraper(s)	5	-	-	-	5	3.45
Total:	128	5	9	3	145	100.01
Percent:	88.28	3.45	6.21	2.07	100.01	

**Rounded totals may not equal 100%*

<u>TABLE 6.10–2</u>
Surface Collection, Site SDI-8077

Surface Collection	Quantity	Artifact Type	Material Type	Catalog #
1	1	Flake	Medium-grained Metavolcanic	37
2	1	Flake	Fine-grained Metavolcanic	38
	2	Flakes	Medium-grained Metavolcanic	39
3	1	Flake	Medium-grained Metavolcanic	40
4	1	Debitage	Fine-grained Metavolcanic	41
	1	Debitage	Medium-grained Metavolcanic	42
	1	Flake	Medium-grained Metavolcanic	43
5	1	Flake	Medium-grained Metavolcanic	44
6	1	Debitage	Medium-grained Metavolcanic	45
	1	Flake	Medium-grained Metavolcanic	46
7	1	Flake	Fine-grained Metavolcanic	47
8	1	Retouched Flake	Medium-grained Metavolcanic	48
	1	Debitage	Medium-grained Metavolcanic	49
	2	Flakes	Medium-grained Metavolcanic	50
9	1	Cobble Scraper	Medium-grained Metavolcanic	51
	1	Debitage	Medium-grained Metavolcanic	52
11	1	Utilized Flake	Medium-grained Metavolcanic	53
12	1	Scraper	Medium-grained Metavolcanic	54
13	1	Flake	Medium-grained Metavolcanic	55
14	1	Retouched Debitage	Medium-grained	56

Surface Collection	Quantity	Artifact Type	Material Type	Catalog #
			Metavolcanic	
	1	Core Tool	Medium-grained Metavolcanic	57
	1	Flake	Medium-grained Metavolcanic	58
15	1	Retouched Flake	Medium-grained Metavolcanic	59
	2	Flakes	Medium-grained Metavolcanic	60
16	1	Scraper	Medium-grained Metavolcanic	61
	2	Flakes	Medium-grained Metavolcanic	62
17	1	Utilized Flake	Medium-grained Metavolcanic	63
18	1	Debitage	Medium-grained Metavolcanic	64
19	1	Flake	Fine-grained Metavolcanic	65
20	1	Cobble Tool	Medium-grained Metavolcanic	66
21	3	Debitage	Medium-grained Metavolcanic	67
	5	Flakes	Medium-grained Metavolcanic	68
23	1	Hammerstone, single edge	Medium-grained Metavolcanic	69
	1	Core Tool	Medium-grained Metavolcanic	70
	1	Flake	Medium-grained Metavolcanic	71
24	1	Hammerstone, spherical	Medium-grained Metavolcanic	72
	1	Flake	Medium-grained Metavolcanic	73
25	1	Flake	Medium-grained Metavolcanic	74
26	1	Cobble Scraper	Medium-grained Metavolcanic	75
27	1	Hammerstone, single edge	Medium-grained Metavolcanic	76

Surface Collection	Quantity	Artifact Type	Material Type	Catalog #
	1	Core	Medium-grained Metavolcanic	77
	1	Flake	Medium-grained Metavolcanic	78
28	1	Retouched Flake	Medium-grained Metavolcanic	79
30	1	Flake	Medium-grained Metavolcanic	80
31	1	Flake	Medium-grained Metavolcanic	81
32	1	Retouched Flake	Fine-grained Metavolcanic	82
	1	Flake Scraper	Medium-grained Metavolcanic	83
	1	Flake	Medium-grained Metavolcanic	84
33	1	Flake	Medium-grained Metavolcanic	85
34	1	Flake	Fine-grained Metavolcanic	86
	1	Utilized Flake	Medium-grained Metavolcanic	87
35	2	Flakes	Medium-grained Metavolcanic	88
36	1	Flake	Medium-grained Metavolcanic	89
37	1	Scraper	Medium-grained Metavolcanic	90
	1	Debitage	Medium-grained Metavolcanic	91
	1	Flake	Medium-grained Metavolcanic	92
38	1	Flake	Medium-grained Metavolcanic	93
39	1	Debitage	Medium-grained Metavolcanic	94
40	1	Utilized Debitage	Medium-grained Metavolcanic	95
41	1	Cobble Tool	Medium-grained Metavolcanic	96
42	1	Flake	Fine-grained Metavolcanic	97
	1	Cobble Tool	Medium-grained	98

Surface Collection	Quantity	Artifact Type	Material Type	Catalog #
			Metavolcanic	
43	1	Core Tool	Medium-grained Metavolcanic	99
44	1	Flake	Fine-grained Metavolcanic	100
45	1	Retouched Debitage	Medium-grained Metavolcanic	101
46	1	Flake	Medium-grained Metavolcanic	102
47	1	Debitage	Medium-grained Metavolcanic	103
48	1	Flake	Medium-grained Metavolcanic	104
49	1	Debitage	Medium-grained Metavolcanic	105
	1	Flake	Medium-grained Metavolcanic	106
50	1	Retouched Flake	Fine-grained Metavolcanic	107
51	1	Core Tool	Medium-grained Metavolcanic	108
52	2	Flakes	Medium-grained Metavolcanic	109
53	1	Scraper	Medium-grained Metavolcanic	110
	1	Debitage	Medium-grained Metavolcanic	111
	2	Flakes	Medium-grained Metavolcanic	112
54	1	Flake	Medium-grained Metavolcanic	113
55	2	Flakes	Medium-grained Metavolcanic	114
56	1	Retouched Flake	Medium-grained Metavolcanic	115
58	1	Flake	Medium-grained Metavolcanic	116
60	4	Flakes	Medium-grained Metavolcanic	117
61	1	Retouched Flake	Medium-grained Metavolcanic	118
62	2	Flakes	Medium-grained	119

Surface Collection	Quantity	Artifact Type	Material Type	Catalog #
			Metavolcanic	
63	1	Flake	Medium-grained Metavolcanic	120
64	1	Core	Medium-grained Metavolcanic	121
66	1	Flake	Medium-grained Metavolcanic	122
67	1	Flake	Fine-grained Metavolcanic	123
	1	Core	Medium-grained Metavolcanic	124
	2	Flakes	Medium-grained Metavolcanic	125
68	1	Flake	Medium-grained Metavolcanic	126
70	1	Flake	Medium-grained Metavolcanic	127
71	1	Utilized Flake	Fine-grained Metavolcanic	128
72	1	Flake	Medium-grained Metavolcanic	129
73	1	Scraper	Medium-grained Metavolcanic	130
	2	Flakes	Medium-grained Metavolcanic	131
74	1	Flake	Medium-grained Metavolcanic	132
75	1	Flake	Medium-grained Metavolcanic	133
76	2	Flakes	Medium-grained Metavolcanic	134
77	1	Flake	Fine-grained Metavolcanic	135
	3	Flakes	Medium-grained Metavolcanic	136
78	1	Retouched Flake	Medium-grained Metavolcanic	137
79	1	Retouched Flake	Fine-grained Metavolcanic	138
	1	Flake	Medium-grained Metavolcanic	139
80	1	Retouched Flake	Fine-grained Metavolcanic	140
	1	Debitage	Medium-grained Metavolcanic	141

TABLE 6.10–3
Surface Scrape Recovery, Site SDI-8077

Surface scrape	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
2		3	Flakes	Medium-grained Metavolcanic	1
5		1	Flake	Medium-grained Metavolcanic	2
6		1	Flake	Medium-grained Metavolcanic	3
3	0-4	No Recovery			145
4	0-4	No Recovery			146
11	0-4	No Recovery			147

TABLE 6.10–4
Shovel Test Pit Excavation Data, Site SDI-8077

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	No Recovery			4
	10-20				5
	20-30	1	Flake	Fine-grained Metavolcanic	6
2	0-10	3	Flakes	Medium-grained Metavolcanic	7
	10-20	2	Flakes	Medium-grained Metavolcanic	8
	20-30	No Recovery			9
3	0-10	No Recovery			10
	10-20	2	Flakes	Medium-grained Metavolcanic	11
	20-30	No Recovery			12
4	0-10	No Recovery			13
	10-20				14
	20-30				15
5	0-10	No Recovery			16
	10-20				17

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
	20-30				18
6	0-10	No Recovery			19
	10-20				20
	20-30				21
7	0-10	1	Flake(s)	Fine-grained Metavolcanic	22
	10-20	No Recovery			23
	20-30				24
8	0-10	No Recovery			25
	10-20				26
	20-30				27
9	0-10	No Recovery			28
	10-20				29
	20-30				30
10	0-10	No Recovery			31
	10-20				32
	20-30				33
11	0-10	No Recovery			34
	10-20				35
	20-30				36

TABLE 6.10–5
Test Unit Excavation Data, Site SDI-8077

Test Unit	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	No Recovery			142
	10-20	3	Flake(s)	Medium-grained Metavolcanic	143
	20-30	No Recovery			144

TABLE 6.10–6

Lithic Material Distribution, Site SDI-8077

Recovery Category	FGM	MGM	Total	Percent
Expedient Tools:				
Utilized Debitage		1	1	0.69
Utilized Flake(s)	1	3	4	2.76
Lithic Production Waste:				
Core(s)		3	3	2.07
Debitage	1	14	15	10.34
Flake(s)	10	82	92	63.45
Percussion Tools:				
Hammerstone(s)		3	3	2.07
Precision Tools:				
Cobble Scraper(s)		2	2	1.38
Cobble Tools(s)		3	3	2.07
Core Tool(s)		4	4	2.76
Flake Scraper(s)		1	1	0.69
Retouched Debitage		2	2	1.38
Retouched Flake(s)	4	6	10	6.10
Scraper(s)		5	5	3.45
Total:	16	129	145	100.01
Percent:	11.03	88.97	100.00	

**Rounded totals may not equal 100%*

6.11 Site SDI-8078

6.11.1 Site Description

Site SDI-8078 was first recorded in 1974 and described as a moderate lithic scatter including percussion tools, precision tools, one metate, and lithic production waste (Carrico 1974). The site was relocated in 1990 and noted as a moderate density lithic scatter expanded by plowing disturbances (Robbins-Wade and Gross 1990). BFSA relocated the site and found only one artifact on the surface. The site is located on a relatively level, slightly south-sloping broad knoll in the northern portion of the project area (Figure 6.0–1). The site is situated at approximately 570 feet AMSL. Disturbances include agricultural disking activities, erosion, and a north/south oriented dirt road in the western portion of the site. Off-road enthusiasts and United States Border Patrol use these roads. Some degree of erosion has also occurred. Dense, tall grasses resulted in very poor ground visibility in the off-road portions of the site. Ground visibility within the dirt road was excellent. No bedrock outcrops, features, or darkened soils were observed. The general configuration of the resource is shown in Figure 6.11–1. The setting of the site is shown in Plate 6.11–1. Testing of Site SDI-8078 consisted of a surface collection and the excavation of five surface scrapes (SS) and 11 shovel test pits (STPs).

6.11.2 Description of Field Investigations

Field investigations at Site SDI-8078 were conducted using the standard methodologies described in Section 5.0. A total of three artifacts were recovered during the current investigation. A summary of artifact recovery from the site is presented in Table 6.11–1, while detailed provenience information is provided in the artifact catalog (Appendix IV).

<u>*Surface Recordation*</u>

The entire surface of the site was inspected for artifacts and features. All artifacts and excavations were mapped using a handheld GPS unit (Figure 6.11–1). Off-road portions of the site surface were covered with dense tall grasses; subsequently, surface visibility was poor across these areas. To account for poor ground visibility, five surface scrapes were placed off-road (Figure 6.11–1).

The surface collection resulted in the collection of one MGM hammerstone. Artifacts were located in two of the five surface scrapes (SS 1 and SS 7). Surface Scrape 1 (SS 1) yielded one FGM utilized flake and SS 7 yielded one MGM flake. Tables 6.11–1 summarizes the surface scrape results, while detailed provenience information is provided in Table 6.11–2. The overall site dimensions, as identified by the surface distribution of artifacts, measure approximately 120 meters (395 feet) from north to south by 138 meters (452 feet) from east to west, covering 13,153 square meters (141,582 square feet).

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-8078 was investigated through the excavation of a total of 11 STPs. Shovel test pits were excavated across the entire site, and were placed according to the field methodology described in Section 5.0. The locations of the STPs are shown in Figure 6.11–1. All shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters. None of the 11 STPs excavated at Site SDI-8078 was positive for cultural material.

6.11.3 Laboratory Analysis

Laboratory analysis for Site SDI-8078 included the standard procedures described in Section 5.0 of this report. All artifacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-8078 included a total of three lithic artifacts, summarized in Table 6.11–1 and detailed in Appendix IV.

Lithic Artifact Analysis

The three artifacts recovered from SDI-8078 represent different artifact classes (one percussion tool, one expedient tool, and one lithic production waste flake) and different artifact types (one hammerstone, one utilized flake, and one flake).

All three of the recovered artifacts were manufactured from locally available material. The hammerstone and the flake were manufactured with medium-grained metavolcanic material while the utilized flake was manufactured from fine-grained metavolcanic material. A summary of all lithic artifacts by material is shown below in Table 6.11–3. Detailed material type and tool measurement data can be found in the artifact catalog (Appendix IV). Activities indicated by the artifacts recovered from the site includes limited lithic tool production.

6.11.4 Discussion

The current testing program demonstrated that Site SDI-8078 consists of a sparse surface scatter of artifacts with no associated subsurface deposit. The overall site dimensions, as identified by the surface distribution of artifacts, measure approximately 120 meters (395 feet) from north to south by 138 meters (452 feet) from east to west, covering 13,153 square meters (141,582 square feet). Shovel test excavations indicate that no subsurface deposits are located at Site SDI-8078. The artifacts collected were manufactured from locally available materials. Based on the sparse nature of the surface scatter and the limited variety and quantity of material recovered from the site, the site exhibits no additional research potential.

The site is interpreted as a small lithic scatter where activities centered on lithic production. The limited quantity and range of lithic material suggests a limited use of the site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. The research potential of the site has been exhausted through the current testing program.

6.11.5 Summary

Analysis of cultural materials recovered from Site SDI-8078 revealed a sparse surface scatter of artifacts with no associated subsurface deposit. The recovered materials indicate that site activities were focused on lithic production.

Site SDI-8078 exhibits no intact subsurface cultural deposits and no potential for buried cultural features. The site exhibits no unique elements and no additional research potential. However, the site did yield information during the testing program. Therefore, according to the criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007), Site SDI-8078 is considered a significant cultural resource.

Plate 6.11–1 Overview of Site SDI-8078, facing southeast.

<u>Figure 6.11–1</u>
Excavation Location Map — Site SDI-8078

(Deleted for Public Review; Bound Separately)

TABLE 6.11–1
Artifact Summary, Site SDI-8078

Recovery Category	Surface scrape	Shovel Test	Surface Collection	Total	Percent
Expedient Tools:					
Utilized Flake(s)	1	-	-	1	33.33
Lithic Production Waste:					
Flake(s)	1	-	-	1	33.33
Percussion Tools:					
Hammerstone(s)	-	-	1	1	33.33
Total:	2	0	1	3	99.99
Percent:	66.66		33.33	99.99	

**Rounded totals may not equal 100%*

TABLE 6.11–2
Surface Scrape Recovery, Site SDI-8078

Surface scrape	Quantity	Artifact Type	Material Type	Catalog #
1	1	Utilized Flake	Fine-grained Metavolcanic	35
3	No Recovery			37
5	No Recovery			39
7	1	Flake	Medium-grained Metavolcanic	41
9	No Recovery			43

TABLE 6.11–3
Lithic Material Distribution, Site SDI-8078

Recovery Category	FGM	MGM	Total	Percent
Expedient Tools:				
Utilized Flake(s)	1	-	1	33.33
Lithic Production Waste:				
Flake(s)	-	1	1	33.33
Percussion Tools:				
Hammerstone(s)	-	1	1	33.33
Total:	1	2	3	99.99
Percent:	33.33	66.66	99.99	

**Rounded totals may not equal 100%*

6.12 Site SDI-11,798

6.12.1 Site Description

Site SDI-11,798 was first recorded in 1989 and described as a very light lithic scatter that included flakes/debitage, cores, and flaked tools (Robbins-Wade and Gross 1990). The current survey failed to relocate any surface artifacts. However, because SDI-11,798 has never been tested for significance, and due to extremely poor ground visibility, the site was tested for significance at its previously recorded location during the current investigation. The site is located on level terrain in the western portion of the project area (Figure 6.0–1). Elevation at the site is approximately 155 feet AMSL. Disturbances in the area include disking activities associated with past agricultural practices and erosion. Dense, tall grasses resulted in very poor ground visibility. No bedrock outcrops, features, or darkened soils were observed. The general configuration of the resource is shown in Figure 6.12–1. The setting of the site is shown in Plate 6.12–1. Testing of Site SDI-11,798 consisted of a surface collection and the excavation of five surface scrapes (SS) and 11 shovel test pits (STP).

6.12.2 Description of Field Investigations

Field investigations at Site SDI-11,798 were conducted using the standard methodologies described in Section 5.0. A total of two artifacts were recovered during the current investigation. A summary of artifact recovery from the site is presented in Table 6.12–1, while detailed provenience information is provided in the artifact catalog (Appendix IV).

Surface Recordation

Although ground visibility was very poor, the entire surface of the site was inspected for artifacts and features. To account for poor ground visibility, five surface scrapes were placed throughout the site (Figure 6.12–1). No artifacts were recovered as result of the surface collection or the surface scrapes. The locations of the surface scrapes are shown in Figure 6.12–1.

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-11,798 was investigated through the excavation of a total of eleven STPs. Shovel test pits were excavated across the entire site, and were placed according to the field methodology discussed in Section 5.0. The locations of the STPs are shown in Figure 6.12–1. All STPs were excavated in decimeter levels to a minimum depth of 30 centimeters, unless one sterile level or bedrock was encountered.

Excavation of the STPs resulted in the recovery of two flakes from STP 3 and STP 8, respectively (Table 6.12–2); however, both of these flakes were recovered from the 0-10 centimeter level.

6.12.3 Laboratory Analysis

Only two artifacts were recovered from the testing program. Detailed excavation data is provided in Table 6.12–2, and an artifact catalog documenting all investigations is provided in Appendix IV.

6.12.4 Discussion

Although two artifacts were recovered from the shovel tests, both were recovered from the 0-10 centimeter level and most likely represent the “smear”, or background noise, described by the *Management Plan for Otay Mesa Prehistoric Resources, San Diego, California* (Gallegos et al. 1998). Agricultural disking may also have aided in the downward movement of these artifacts. There is little variety in the artifact types recovered and a complete absence of ecofacts. Site SDI-11,798 does not appear to exhibit additional research potential.

The site is interpreted as a limited lithic tool processing and maintenance site. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered from the site. Although testing indicates a shallow subsurface deposit is present, it appears to be very isolated with little reserach potential.

6.12.5 Summary

Site SDI-11,798 exhibits no subsurface cultural deposits, no potential for buried cultural features, and no additional research potential. However, the site did yield information during the testing program. Therefore, according to the criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007), Site SDI-11,798 is considered a significant cultural resource.

<u>Figure 6.12–1</u>
Excavation Location Map — Site SDI-11,798

(Deleted for Public Review; Bound Separately)

Plate 6.12–1 Overview of Site SDI-11,798, facing east.

TABLE 6.12–1
Artifact Summary, Site SDI-11,798

Recovery Category	Surface	Surface scrape	Shovel Test	Total	Percent
Lithic Production Waste					
Flake(s)	-	-	2	2	100.00
Total:	0	0	2	2	100.00
Percent:			100.00	100.00	

**Rounded totals may not equal 100%*

<u>TABLE 6.12–2</u>
Shovel Test Pit Excavation Data, Site SDI-11,798

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	No Recovery			1
	10-20				2
	20-30				3
2	0-10	No Recovery			4
	10-20				5
	20-30				6
3	0-10	1	Flake	Medium-grained metavolcanic	7
	10-20	No Recovery			8
	20-30				9
4	0-10	No Recovery			10
	10-20				11
	20-30				12
5	0-10	No Recovery			13
	10-20				14
	20-30				15
6	0-10	No Recovery			16
	10-20				17
	20-30				18
7	0-10	No Recovery			19
	10-20				20
	20-30				21
8	0-10	1	Flake	Fine-grained metavolcanic	22
	10-20	No Recovery			23
	20-30				24
9	0-10	No Recovery			25
	10-20				26
	20-30				27
10	0-10	No Recovery			28
	10-20				29
	20-30				30
11	0-10	No Recovery			31
	10-20				32
	20-30				33

6.13 Site SDI-11,799/H

6.13.1 Site Description

Site SDI-11,799/H is a multi-component site located in a level area within the northwestern portion of the project area (Figure 6.13–1). The site was first identified in 1989 by Affinis and was described as a historic site including a cistern filled with wood and debris and an isolated amethyst bottleneck (Appendix IV). The site was relocated during the current survey as a multi-component historic trash and prehistoric lithic scatter and subsequently tested for significance. The site elevation is approximately 530 feet AMSL. Disturbances in the area include agricultural disking activities, erosion, and a graded dirt road along the northern site boundary. Off-road enthusiasts and the United States Border Patrol use these roads. Ground visibility was moderate and adequate for the surface collection. No bedrock outcrops, prehistoric features, or darkened soils were observed. The general configuration of the resource is shown in Figure 6.13–1. The setting of the site is shown in Plates 6.13–1 and 6.13–2. Testing of Site SDI-11,799/H consisted of the collection and mapping of all surface artifacts and the excavation of 19 shovel test pits (STPs) and one standard test unit (TU 1).

6.13.2 Description of Field Investigations

Field investigations at Site SDI-11,799/H were conducted using the standard methodologies described in Section 5.0. A total of 237 historic artifacts, 13 prehistoric artifacts, and 3.4 grams of ecofacts were recovered during the current investigation. A functional analysis of the historic artifact recovery from the site is presented in Table 6.13–1, while detailed provenience information is provided in the artifact catalog (Appendix IV). A summary of prehistoric artifact recovery from the site is presented in Table 6.13–6, while detailed provenience information is provided in the artifact catalog (Appendix IV).

<u>Surface Recordation</u>

The entire surface of the site was inspected for artifacts and features. All artifacts and excavations were mapped using a handheld GPS unit (Figure 6.13–1). Surface visibility was moderate to excellent throughout the site. The surface expression of the site measured approximately 105 meters (344 feet) from north/south by 117 meters (383 feet) from east/west, covering approximately 10,347 square meters (33,930 square feet).

Historic Surface Collection

All artifacts observed on the surface of the site were mapped and collected, the locations of which are illustrated in Figure 6.13–1. The surface artifacts were widely scattered throughout the site area. The surface collection consisted of 67 historic artifacts and 112.1 grams of marine shell (Table 6.13–2). The historic artifacts collected during the surface collection consist primarily of ceramics and glass followed by a few pieces of metal. The artifacts appear to represent a domestic context.

Prehistoric Surface Collection

The prehistoric surface collection consisted of seven lithic artifacts. The collection included one expedient tool (utilized flake), one precision tool (retouched flake), one worked bone, and four pieces of lithic production waste (three flakes and one piece of debitage) (6.13–7). All the artifacts were manufactured from medium-grained metavolcanic material.

Subsurface Excavation

The potential for subsurface cultural deposits at Site SDI-11,799/H was investigated through the excavation of 19 STPs. Shovel test pits were excavated across the entire site, and were placed according to the sampling strategy discussed in Section 5.0 and the locations of the surface artifacts. The locations of the STPs are shown in Figure 6.13–1. All STPs were excavated in decimeter levels to a minimum depth of 30 centimeters, unless one sterile level or bedrock was encountered.

The subsurface excavation at SDI-11,799/H continued with the placement of a standard one-by-one meter test unit (TU 1) adjacent to STP 1. The excavation resulted in the identification of a subsurface historic feature (Feature 1). Historic artifacts were recovered from 0 to 150 centimeters below the surface. TU 1 was excavated to a final depth of 150 centimeters, where sterile subsoil was encountered. To be certain that sterile subsoil was reached, an STP was placed at the bottom of TU 1 and excavated for another 20 centimeters. No artifacts were recovered from the STP placed at the bottom of TU 1. The north and east wall profiles of TU 1 show the southern edge of Feature 1 (Figures 6.13–2 and 6.13–3; Plates 6.13–3 and 6.13–4).

Soils within TU 1 are characterized as a semi-compact dark grayish brown (10YR 4/2) clay loam plow zone overlaying a compact grayish brown (10YR 5/2) clay loam mottled with approximately 5% white (10YR 8/1) decomposed sandstone overlaying a compact white (10YR 8/1) decomposed sandstone. When viewing the east wall profile, this last stratigraphic layer (the decomposed sandstone) indicates the southern boundary of Feature 1. The north wall profile is shown in Figure 6.13–2 and Plate 6.13–3. Stratigraphically, the north and east wall profiles within TU 1/Feature 1 do not show multiple levels and does not seem to indicate multiple dumping episodes.

Only one test unit was placed in SDI-11,799/H; therefore any interpretations of Feature 1 are tenuous. Nonetheless, the obvious southern boundary of the feature indicates a rectangular or square shape, indicating that Feature 1 may be a privy. However, no wood lining was observed on the southern feature boundary as would be expected with a privy.

Historic Subsurface Recovery

Five of the 19 STPs excavated at Site SDI-11,799/H were positive for historic cultural material (STPs 1, 2, 10, 15, and 16). Figure 6.13–1 illustrates the STP results for historic artifacts, and detailed excavation data is provided in Table 6.1–3. STPs 1 and 2 stand out based on the quantity and depth of their recoveries. STP 1 recovered historic artifacts from 0 to 60 centimeters below surface, while STP 2 recovered artifacts from 0 to 40 centimeters below the surface. The historic STP recovery includes glass, ceramics, bone, unidentified metal, and nails. Historic artifacts recovered from TU 1/Feature 1 include nails, glass, parts of a wood-burning stove, ceramics, bone, barbed wire, clothing, munitions, and unidentifiable stone and metal fragments. The recovery was fairly consistent as excavations continued; there was no major increase or decrease in artifact quantity between the upper and lower portions of TU1/Feature 1. The historic artifacts from TU 1/Feature 1 are summarized by functional category in Table 6.13–4, and detailed excavation data is provided in Appendix IV.

Prehistoric Subsurface Recovery

Two of the 19 STPs excavated at Site SDI-11,799/H were positive for prehistoric cultural material (STPs 1 and 2). Figure 6.13–1 illustrates the STP results for prehistoric artifacts. STP 1 recovered three flakes and 1.1 grams of marine shell between the surface and 30 centimeters. STP 2 recovered two flakes between the surface and 30 centimeters. Prehistoric STP recovery is summarized in Table 6.13–6 and detailed in Table 6.13–8. No prehistoric artifacts were recovered from TU 1.

6.13.3 Laboratory Analysis

Laboratory analysis for Site SDI-11,799/H included the standard procedures described in Section 5.0 of this report. All artifacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-11,799/H included a total of 237 historic artifacts, 1.1 grams of ecofacts, and 13 lithic artifacts, which are summarized in Tables 6.13–1 and 6.13–8 and detailed in Appendix IV.

Historic Artifact Analysis

The recovery from TU 1/Feature 1 includes a wide range of artifacts typical for a rural homestead. The most prominent functional category is Domestic Non-Expendable, which represents 35.51% of the assemblage (Table 6.13–1). These artifacts include glass and ceramic tableware. The remaining functional categories include Construction Maintenance (31.3%), Domestic Expendable (12.5%), Personal (9.8%), Domestic General (5.1%), Unknown (2.8%), Recreation (1.9%), and Farming/Ranch (1.4%). In addition to the artifacts, 120 grams of historic ecofacts were recovered, including 119.4 grams of bone and 0.6 grams of eggshell.

Fortunately, TU 1/Feature 1 yielded a number of nails and bottle fragments that confidently date the feature to the late 19th century. The dates of artifacts were consistent throughout TU 1/Feature 1 (Table 6.13–5). Temporally diagnostic artifacts retrieved from the deeper levels do not pre-date artifacts from the shallower levels. Table 6.13–4 lists the TU 1 historic artifacts by functional category while the TU 1 temporally diagnostic artifacts are listed in Table 6.13–5.

For Site SDI-11,799/H, the overall recovery closely mirrors the TU 1/Feature 1 recovery. The most prominent functional category is Construction/Maintenance, which represents 32.9% of the total historic assemblage from the site. These artifacts include primarily nails and a lesser amount of screws. The remaining functional categories include Domestic Non-Expendable (32.1%), Domestic Expendable (15.2%), Personal (9.3%), Domestic General (4.6%), Unknown (2.5%), Recreation (2.1%), and Farming/Ranch (1.3%). The overall assemblage indicates a late 19^{th} century rural homestead engaging in agriculture and/or ranching.

Prehistoric Artifact Analysis

Lithic production waste accounted for the largest category of lithic artifacts, representing 83.33% (N=10) of the collection, including eight flakes and one piece of debitage mostly made from locally available medium-grained metavolcanic material. One of the flakes was quartz. The remaining lithic collection consisted of one precision tool (8.33%), a retouched flake manufactured from MGM, and one expedient tool (8.33%), a utilized flake, also manufactured from MGM. The lithic material distribution of the prehistoric artifacts is provided in Table 6.13–9; detailed material type and tool measurement data can be found in the artifact catalog (Appendix IV). Activities indicated by the artifacts recovered from the site include a limited amount of lithic tool production. The 1.1 grams of marine shell appear to be *Chione* sp.

6.13.4 Historic Discussion

The historic component of the site is interpreted as a late 19th century homestead engaging in agricultural and/or ranching activities. The range of artifacts indicates a domestic context supplemented by ranching/farming activities. A review of the USGS 1903 30' Cuyamaca topographic map indicates a structure was present at the location of SDI-11,799/H (Figure 6.13–4). According to the map, the structure is clearly within the current project boundaries. A review of the Bureau of Land Management (BLM) General Land Office (GLO) records indicates the property was first purchased in 1889 by Daniel McCarthy under the Homestead Act of 1862 (Doc. No. 937: 7/9/1889). The Homestead Act of 1862 offered the individual citizen an opportunity to claim 160 acres, provided that the land was developed for agricultural and residential use (Gates 1962). Daniel McCarthy also owned other properties in the area (Doc. No. 2558:4/5/1890 and Doc. No. 7:7/25/1892), none of which were adjacent to the site or the project area. At this time, it is unknown whether Daniel McCarthy resided at the residence located at SDI-11,799/H, or if he rented out the property or the house to other individuals.

The location of Feature 1 (TU 1) coincides with the location of the structure visible on the 1903 topographic map (Figure 6.13–4). Test Unit 1 (Feature 1) indicated there is a deep historical deposit up to a depth of 150 centimeters below the surface. The artifacts and ecofacts recovered likely represents refuse deposited by the occupants of that early structure. The assemblage indicates the deposit originated in a domestic context supplemented by rural agricultural and ranching activities.

6.13.5 Prehistoric Discussion

The current testing program demonstrated that the prehistoric component of Site SDI-11,799/H consists of a sparse surface scatter of artifacts with an associated subsurface deposit that included 13 lithic artifacts and 1.1 grams of marine shell. The surface scatter, which has been collected and analyzed, was widely scattered across the site. Shovel test pit and test unit excavations indicate that although a minimal prehistoric subsurface deposit exists, it does not contain an extensive quantity or variety of artifacts. Based on the sparse nature of the surface scatter and the limited variety and quantity of prehistoric material recovered the site, the prehistoric aspect of the site exhibits no additional research potential.

The prehistoric component of the site is interpreted as a limited-use area where activities included lithic tool manufacture. No temporally diagnostic artifacts, which would aid in identifying the site to a particular prehistoric time period, were recovered from the site. The limited quantity and range of cultural material suggests a limited use of the site. The prehistoric research potential of the site has been exhausted through the current testing program.

6.13.6 Summary

Site SDI-11,799/H is a multi-component site located in a level area within the northwestern portion of the project area. The overall site dimensions, as identified by the surface distribution of artifacts, measure approximately 105 meters (344 feet) from north to south by 117 meters (383 feet) from east to west, covering 10,347 square meters (33,930 square feet). The subsurface area of the site, based on the results of the shovel test pit and test unit excavations, measured approximately 1,046 square meters (3,431 square feet).

The current testing program demonstrated that the prehistoric component of Site SDI-11,799/H consists of a sparse surface and subsurface scatter of artifacts that included marine shell and flakes. The prehistoric component of the site is interpreted as a limited-use area where activities included marine resource preparation and consumption and lithic tool manufacture. No temporally diagnostic artifacts were recovered from the site.

Although the prehistoric component of Site SDI-11,799/H exhibits a sparse intact subsurface cultural deposit, the lack of variety and breadth indicate that this component of the site has no potential for buried cultural features and no additional research potential. However, the prehistoric component of the site did yield information during the testing program. Therefore, according to the criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007), the prehistoric component of SDI-11,799/H is considered a significant resource.

The historic component of the site is interpreted as a late 19th century homestead site representing agricultural and/or ranching activities. The testing program indicated that a deep historic feature is located in the northwest corner of the site below the plow zone. Historic research indicates this subsurface deposit is located in the vicinity of a historic structure. This resource yielded information during the testing program and possesses additional research potential, which may address important research questions pertaining to homesteading in the late 19th century Otay Mesa area. Therefore, according to the criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007), the historic component of SDI-11,799/H is considered a significant resource.

<u>Figure 6.13–1</u>
Excavation Location Map — Site SDI-11,799/H

(Deleted for Public Review; Bound Separately)

Plate 6.13–1 Overview of Site SDI-11,799/H, facing west.

Plate 6.13–2 Overview of Site SDI-11,799/H, facing south.

Plate 6.13–3 North wall of Test Unit 1 of Site SDI-11,799/H.

Plate 6.13–4 East wall profile of Test Unit 1, Site SDI-11,799/H.

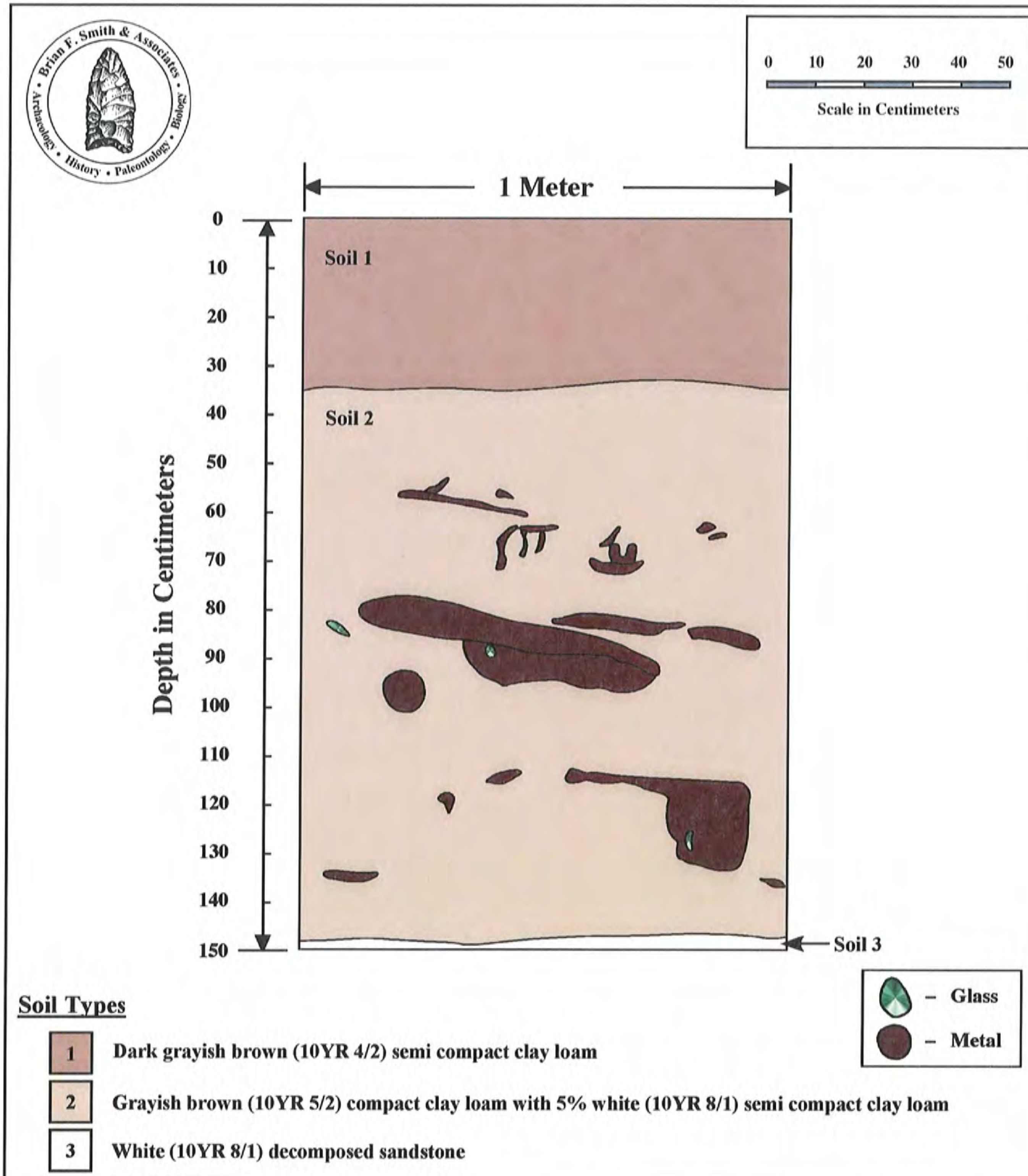


Figure 6.13–2
North Wall Profile of Test Unit 1
Site SDI-11,799H

The Otay Business Park Project

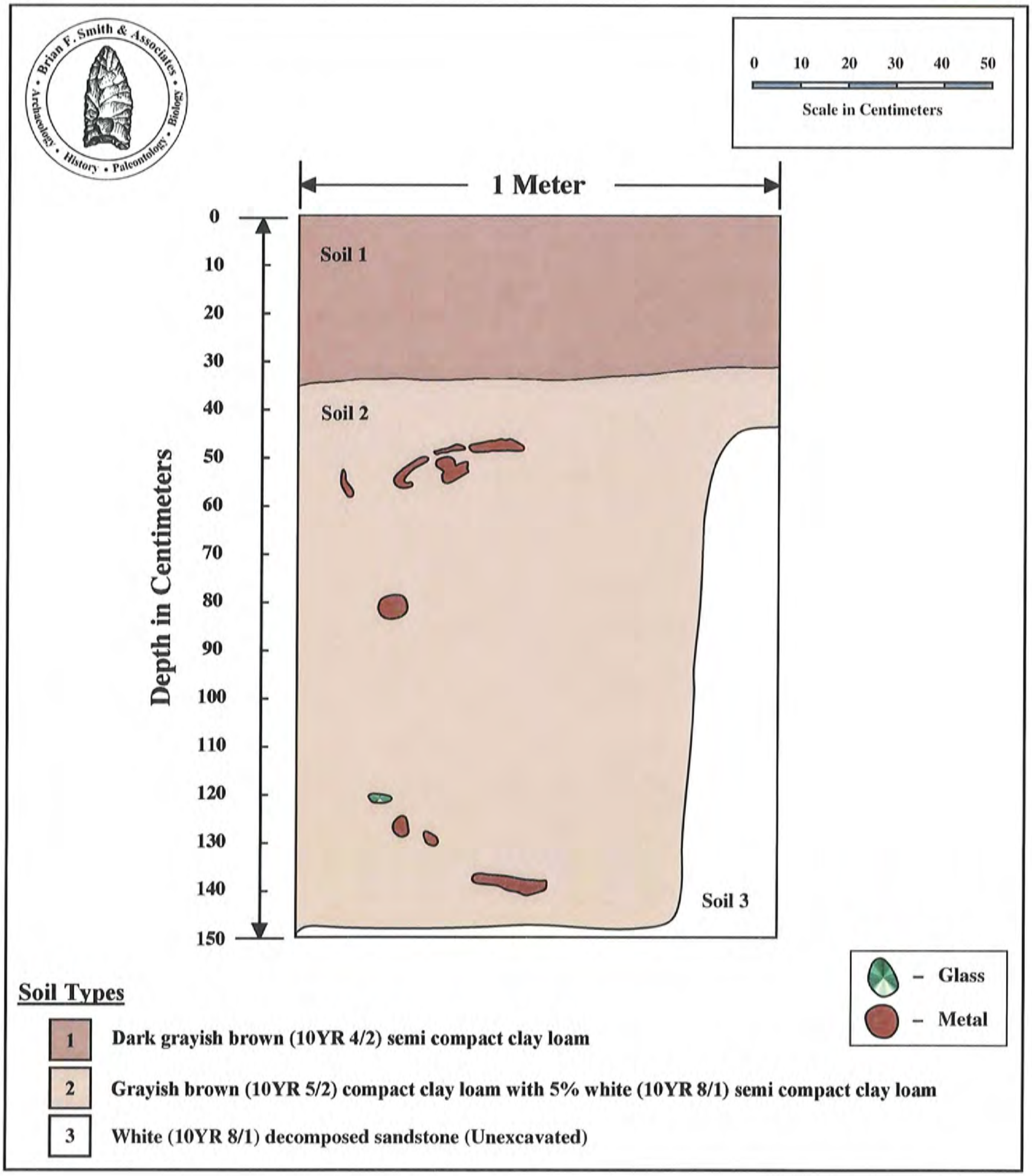


Figure 6.13–3
East Wall Profile of Test Unit 1
Site SDI-11,799H
The Otay Business Park Project

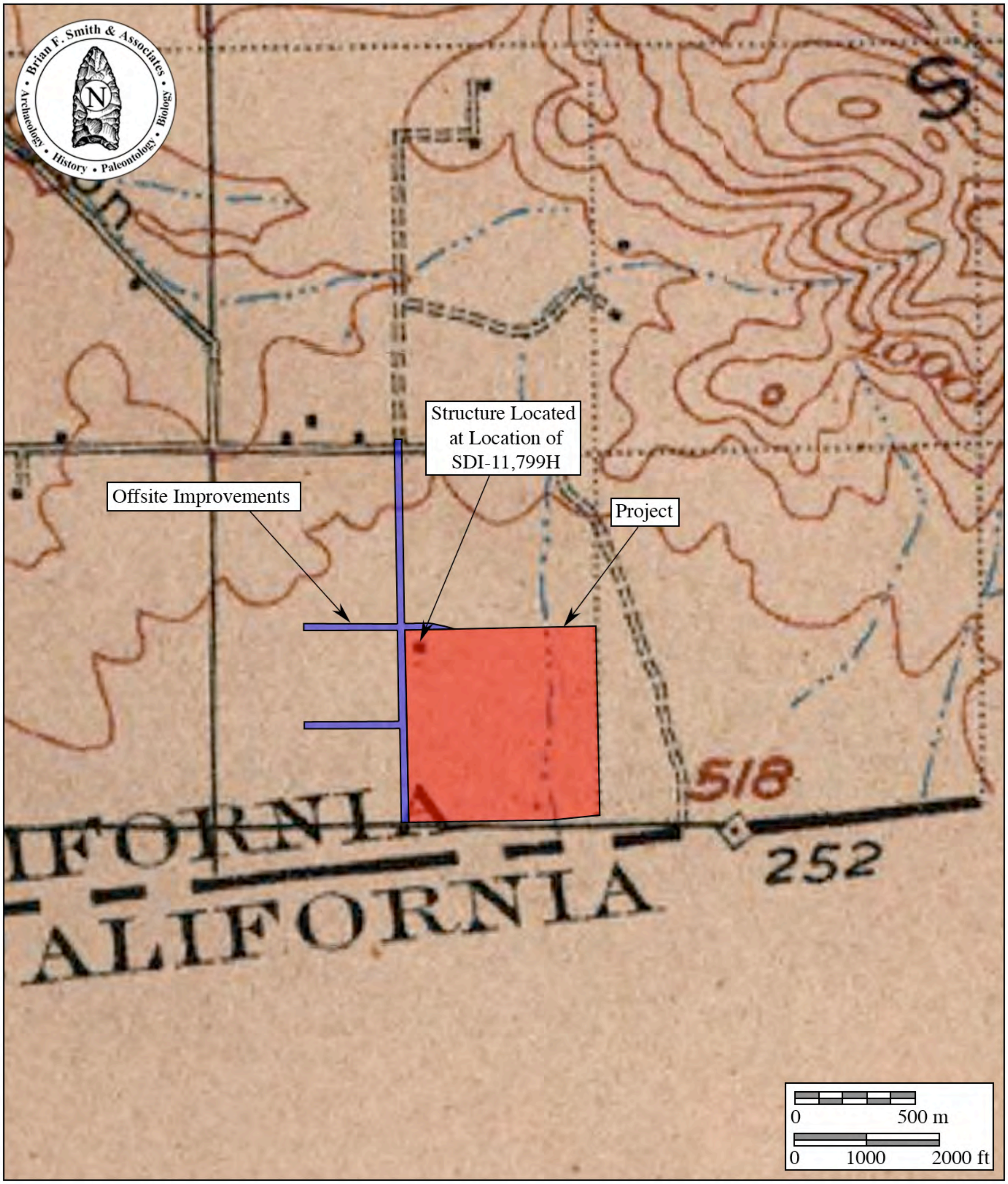


Figure 6.13–4

1903 Topographic Map

The Otay Business Park Project

1903 USGS Cuyamaca Topographic Map

TABLE 6.13–1

Summary of Historic Artifacts by Functional Category
Site SDI-11,799/H

Functional Category/ Artifact Type	Total	Percent*
Construction Maintenance	**78**	**32.91**
Nails	77	
Screws	1	
Domestic Expendable	**36**	**15.19**
Bottle, glass	10	
Bottle/Jar, glass	17	
Can goods, metal	1	
Caps/lids/closures, metal	6	
Jars, glass	2	
Domestic General	**11**	**4.64**
Furnishings, stove	9	
Other, straight pin	1	
Other, pencil ferrule	1	
Domestic Non-Expendable	**76**	**32.07**
Ceramics, tableware	6	
Ceramics, vessel	1	
Glassware, tableware	3	
Glassware, unknown	69	
Ecofacts	**233.2 g**	
Bone	119.5 g.	
Eggshell	0.6 g.	
Marine shell	113.1 g.	
Farming/Ranch	**3**	**1.27**
Fencing, barbed wire	3	
Personal	**22**	**9.28**
Clothing, fasteners	7	
Clothing, shoe fragments	15	

Functional Category/ Artifact Type	**Total**	**Percent***
Recreation	**5**	**2.11**
Munitions, cartridge cases	5	
Unknown	**6**	**2.53**
Metal fragment(s)	5	
Stone fragment(s)	1	
Total:	**237**	**100.00**

TABLE 6.13–2
Historic Surface Collection, Site SDI-11,799/H

Surface	Quantity/ Weight	Artifact Type	Material Type	Catalog #
1	1	Bottle/Jar fragment(s)	Glass (solarized)	1
2	1	Fragment(s)	Ceramic	251
3	1	Tableware fragment(s)	Whiteware	221
4	1	Fragment(s)	Shell, marine*	222
5	2	Bottle/Jar fragment(s)	Glass	223
6	1	Fragment(s)	Glass	224
7	58.6 g.	Fragment(s)	Shell, *Tivela sp.**	2
8	No Historic Recovery			225
9	19.8 g.	Fragment(s)	Shell, *Tivela sp.**	3
10	1	Bottle/Jar fragment(s)	Glass	226
	1	Fragment(s)	Shell, marine*	227
11	1	Fragment(s)	Earthenware	228
	1	Fragment(s)	Whiteware	229
12	1	Bottle/Jar fragment(s)	Glass	230
13	1	Bottle/Jar fragment(s)	Glass	231
14	1	Fragment(s)	Whiteware	232
15	1	Bottle/Jar fragment(s)	Glass	233
16	1	Fragment(s)	Metal	234
17	1	Fragment(s)	Shell, marine*	235
	1	Fragment(s)	Whiteware	236
18	1	Bottle/Jar fragment(s)	Glass	237

Surface	Quantity/ Weight	Artifact Type	Material Type	Catalog #
19	1	Fragment(s)	Ceramic	238
20	1	Can goods fragment(s)	Metal	4
	1	Fragment(s)	Ceramic	239
21	1	Bottle/Jar fragment(s)	Glass	240
22	1	Tableware fragment(s)	Whiteware	241
23	1	Bottle/Jar fragment(s)	Glass (solarized)	5
	1	Bottle/Jar fragment(s)	Glass	242
24	1	Fragment(s)	Glass	243
25	1	Fragment(s)	Metal	244
25	1	Tableware fragment(s)	Whiteware	245
26	1	Window glass fragment(s)	Glass	246
27	1	Tableware fragment(s)	Whiteware	247
28	1	Tableware fragment(s)	Whiteware	248
29	No Historic Recovery			354
30	1	Bottle/Jar fragment(s)	Glass	249
31	1	Bottle/Jar fragment(s)	Glass	250
32	1	Fragment(s)	Shell, marine*	252
33	1	Bottle/Jar fragment(s)	Glass	253
34	20 g	Fragment(s)	Shell, marine*	6
35	13.7 g	Fragment(s)	Shell, *Tivela sp.**	7
36	1	Fragment(s)	Shell, marine*	254
37	1	Bottle/Jar fragment(s)	Glass (solarized)	8
37	1	Bottle/Jar fragment(s)	Glass	255
38	1	Fragment(s)	Shell, marine*	256
39	1	Fragment(s)	Shell, marine*	257
40	1	Tableware fragment(s)	Whiteware	258
41	No Historic Recovery			259
42	1	Window glass fragment(s)	Glass	260
43	1	Bottle/Jar fragment(s)	Glass	261
44	1	Bottle/Jar fragment(s)	Glass	262
45	1	Fragment(s)	Shell, marine*	263
46	1	Fragment(s)	Metal	264
47	1	Window glass fragment(s)	Glass	265
48	1	Fragment(s)	Metal	266
49	1	Bottle/Jar fragment(s)	Glass	267

Surface	Quantity/ Weight	Artifact Type	Material Type	Catalog #
50	1	Bottle/Jar fragment(s)	Glass	268
50	1	Fragment(s)	Shell, marine*	269
51	1	Fragment(s)	Shell, marine*	270
52	1	Tableware fragment(s)	Whiteware	271
53	1	Bottle/Jar fragment(s)	Glass (solarized)	9
54	1	Bottle/Jar fragment(s)	Glass (solarized)	10
55	No Historic Recovery			280
56	No Historic Recovery			281
57	No Historic Recovery			282
58	No Historic Recovery			283
59	1	Tableware fragment(s)	Whiteware	272
60	1	Fragment(s)	Ceramic	273
61	1	Bottle/Jar fragment(s)	Glass (solarized)	11
62	1	Fragment(s)	Shell, marine*	274
63	1	Bottle/Jar fragment(s)	Glass (solarized)	12
64	1	Bottle/Jar fragment(s)	Glass (solarized)	13
64	1	Fragment(s)	Shell, marine*	275
65	1	Fragment(s)	Ceramic	276
66	No Historic Recovery			284
67	1	Fragment(s)	Shell, marine*	277
68	1	Bottle/Jar fragment(s)	Glass	278
69	1	Bottle/Jar fragment(s)	Glass	279

** For marine shell surface collections consisting of multiple fragments, a weight was taken.*

TABLE 6.13–3

Historic Shovel Test Pit Excavation Data, Site SDI-11,799/H

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	1	Nail, Square	Steel	14
		1	Nail, Unknown	Unknown	285
		2	Bottle/Jar fragments	Glass	286
		1	Cartridge	Brass	15

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
			Case		
		1 g	Ecofact	Bone	16
	10-20	1	Nail, Round	Steel	17
		1	Nail, Square	Steel	18
		4	Fragments	Shell	287
		2	Fragments	Glass	288
	20-30	2	Nail, Square	Steel	19
		1	Fragments	Metal	289
		3	Fragments	Glass	290
	30-40	1	Nail, Square	Steel	20
		1	Fragments	Glass	291
		1	Fragments	Metal	292
	40-50	1	Nail, Round	Steel	21
		1	Nail, Unknown	Steel	22
		1	Ecofact	Bone	293
		1	Tableware	Whiteware	294
		1	Botton, 4-holed	Shell	23
	50-60	1	Fragments	Metal	295
2	0-10	1	Fragments	Whiteware	296
		2	Fragments	Glass	297
	10-20	1	Nail, Unknown	Steel	24
		4	Fragments	Metal	298
	20-30	1	Fragments	Glass	299
	30-40	2	Window glass	Glass	300
		1	Fragments	Ceramic	301
	40-50	No Recovery			302
3	0-10	No Recovery			303
	10-20				304
	20-30				305
4	0-10	No Recovery			306
	10-20				307
	20-30				308
5	0-10	No Recovery			309
	10-20				310

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
	20-30				311
6	0-10		No Recovery		312
	10-20				313
	20-30				314
7	0-10		No Recovery		315
	10-20				316
	20-30				317
8	0-10		No Recovery		318
	10-20				319
	20-30				320
9	0-10		No Recovery		321
	10-20				322
	20-30				323
10	0-10	1	Fragments	Ceramic	324
	10-20		No Recovery		325
	20-30				326
11	0-10		No Recovery		327
	10-20				328
	20-30				329
12	0-10		No Recovery		330
	10-20				331
	20-30				332
13	0-10		No Recovery		333
	10-20				334
	20-30				335
14	0-10		No Recovery		336
	10-20				337
	20-30				338
15	0-10	1	Nail, Square	Steel	25
		1	Bottle/Jar fragments	Glass	339
	10-20	2	Window glass	Glass	340
	20-30		No Recovery		341
16	0-10		No Recovery		342
	10-20				343
	20-30				344
17	0-10	1	Nail, Square	Steel	26

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
	10-20	No Recovery			346
	20-30				347
18	0-10	No Recovery			348
	10-20				349
	20-30				350
19	0-10	No Recovery			351
	10-20				352
	20-30				353

TABLE 6.13–4

Summary of Historic Artifacts by Functional Category
TU 1, Site SDI-11,799/H

Functional Category/ Artifact Type	Total	Percent*
Construction Maintenance	**67**	**31.3**
Nails	66	
Screws	1	
Domestic Expendable	**26**	**12.15**
Bottle, glass	10	
Bottle/Jar, glass	8	
Caps/lids/closures, metal	6	
Jars, glass	2	
Domestic General	**11**	**5.14**
Furnishings, stove	9	
Other, straight pin	1	
Other, pencil ferrule	1	
Domestic Non-Expendable	**76**	**35.51**
Ceramics, tableware	6	

Functional Category/ Artifact Type	Total	Percent*
Ceramics, vessel	1	
Glassware, tableware	4	
Glassware, unknown	65	
Ecofacts	**120.0 g**	
Bone	119.4 g.	
Eggshell	0.6 g.	
Farming/Ranch	**3**	**1.4**
Fencing, barbed wire	3	
Personal	**21**	**9.81**
Clothing, fasteners	6	
Clothing, shoe fragments	15	
Recreation	**4**	**1.87**
Munitions, cartridge cases	4	
Unknown	**6**	**2.8**
Metal fragment(s)	5	
Stone fragment(s)	1	
Total:	**214**	**99.98**

TABLE 6.13–5

Temporally Diagnostic Historic Artifacts from TU 1, Site SDI-11,799/H

Artifact Type	Date Range	Entries
Nail, Square	1790 - 1900	12
Nail, Square Type B	1830's - early 1890's	1
Nail, Round unknown	1855 +	9

Artifact Type	Date Range	Entries
Sanford Manufacturing Company glass fragment	1857 +	1
Can key	1866 +	1
Winchester Repeating Arms Cartridge	1873 +	1
Solarized Glass	1880's - 1920's	2
Dr. Kilmer's Swamp Root Kidney Liver and Bladder Cure Binghamton NY USA fragment	1881 +	1
Frederick Heitz Glass Works fragment	1883 - 1896	1
Double ring bottle finish	1885/1890 - 1920's	3
Nail, Round Wire	ca. 1890 +	1
Metal Crown cap	1894/1895 +	1
Federal Cartridge Company .22 rimfire cartridge	1924 +	1

TABLE 6.13–6
Prehistoric Artifact Summary, Site SDI-11,799/H

Recovery Category	Surface	Shovel Test	Total	Percent
Ecofacts:				
Shell	-	1.1 g	1.1 g	
Expedient Tools:				
Utilized Flake(s)	1	-	1	7.69
Lithic Production Waste:				
Debitage	1	-	1	7.69
Flake(s)	3	6	9	69.23
Non-Lithic Uncommon Items				

Recovery Category	Surface	Shovel Test	Total	Percent
Worked bone	1	-	1	7.69
Precision Tools:				
Retouched Flake(s)	1	-	1	7.69
Total:	7	6	13	99.99
Percent:	53.85	46.15	100.00	

**Rounded totals may not equal 100%*

TABLE 6.13–7

Prehistoric Surface Collection, Site SDI-11,799/H

Surface	Quantity/ Weight	Artifact Type	Material Type	Catalog #
1	No Prehistoric Recovery			16
2	No Prehistoric Recovery			17
3	No Prehistoric Recovery			18
4	No Prehistoric Recovery			19
5	No Prehistoric Recovery			20
6	No Prehistoric Recovery			21
7	No Prehistoric Recovery			22
8	1	Retouched Flake(s)	Medium-grained Metavolcanic	1
9	No Prehistoric Recovery			23
10	No Prehistoric Recovery			24
11	No Prehistoric Recovery			25
12	No Prehistoric Recovery			26
13	No Prehistoric Recovery			27
14	No Prehistoric Recovery			28
15	No Prehistoric Recovery			29
16	No Prehistoric Recovery			30
17	No Prehistoric Recovery			31
18	No Prehistoric Recovery			32
19	1	Utilized Flake(s)	Medium-grained Metavolcanic	2
20	No Prehistoric Recovery			33
21	No Prehistoric Recovery			34
22	No Prehistoric Recovery			35

Surface	Quantity/ Weight	Artifact Type	Material Type	Catalog #
23	No Prehistoric Recovery			36
24	No Prehistoric Recovery			37
25	No Prehistoric Recovery			38
26	No Prehistoric Recovery			39
27	No Prehistoric Recovery			40
28	No Prehistoric Recovery			41
29	No Recovery			42
30	No Prehistoric Recovery			43
31	No Prehistoric Recovery			44
32	No Prehistoric Recovery			45
33	No Prehistoric Recovery			46
34	No Prehistoric Recovery			47
35	No Prehistoric Recovery			48
36	No Prehistoric Recovery			49
37	No Prehistoric Recovery			50
38	No Prehistoric Recovery			51
39	No Prehistoric Recovery			52
40	No Prehistoric Recovery			53
41	1	Flake(s)	Medium-grained Metavolcanic	3
42	No Prehistoric Recovery			54
43	No Prehistoric Recovery			55
44	No Prehistoric Recovery			56
45	No Prehistoric Recovery			57
46	No Prehistoric Recovery			58
47	No Prehistoric Recovery			59
48	No Prehistoric Recovery			60
49	No Prehistoric Recovery			61
50	No Prehistoric Recovery			62
51	No Prehistoric Recovery			63
52	No Prehistoric Recovery			64
53	No Prehistoric Recovery			65
54	No Prehistoric Recovery			66
55	1	Worked fragment(s)	Bone	4
56	1	Flake(s)	Medium-grained Metavolcanic	5
57	No Recovery			67
58	No Recovery			68
59	No Prehistoric Recovery			69
60	No Prehistoric Recovery			70
61	No Prehistoric Recovery			71

Surface	Quantity/ Weight	Artifact Type	Material Type	Catalog #
62	No Prehistoric Recovery			72
63	No Prehistoric Recovery			73
64	1	Flake(s)	Medium-grained Metavolcanic	6
65	No Prehistoric Recovery			74
66	1	Debitage	Medium-grained Metavolcanic	7
67	No Prehistoric Recovery			75
68	No Prehistoric Recovery			76
69	No Prehistoric Recovery			77

TABLE 6.13–8

Prehistoric Shovel Test Pit Excavation Data, Site SDI-11,799/H

Shovel Test	Depth (cm)	Quantity	Artifact Type	Material Type	Catalog #
1	0-10	1	Flake(s)	Quartz	8
		0.9 g	Fragment(s)	Shell	9
	10-20	1	Flake(s)	Medium-grained Metavolcanic	10
	20-30	2	Flake(s)	Medium-grained Metavolcanic	11
		0.2 g	Fragment(s)	Shell	12
2	0-10	1	Flake(s)	Medium-grained Metavolcanic	13
	10-20	No Recovery			15
	20-30	1	Flake(s)	Medium-grained Metavolcanic	14

TABLE 6.13–9

Prehistoric Lithic Material Distribution, Site SDI-11,799/H

Recovery Category	MGM	Quartz	Total	Percent
Expedient Tools:				

Recovery Category	MGM	Quartz	Total	Percent
Utilized Flake(s)	1	-	1	8.33
Lithic Production Waste:				
Debitage	1	-	1	8.33
Flake(s)	8	1	9	75
Precision Tools:				
Retouched flake(s)	1	-	1	8.33
Total:	11	1	12	99.99
Percent:	91.67	8.33	100.00	

**Rounded totals may not equal 100%*

6.14 Site SDI-8081

6.14.1 Site Description

Site SDI-8081 is a resource extraction and processing/temporary habitation site located south of SDI-12,888 along the west edge of Alta Road, within the relatively level proposed off-site improvements area (Figure 6.0–1). The site was first recorded in 1974 as a moderate lithic scatter and then updated to a habitation site in 1991 (SCIC site form; Appendix II). Elevation at the site ranges from approximately 500 to 540 feet AMSL. Disturbances in the area include agricultural disking, as well as the grading of one dirt road. This road runs east/west through the center of the site and is commonly used for United States Border Patrol activities. Minimal evidence of erosion was observed. Ground visibility within the roads was excellent; however, beyond the graded roads, ground visibility was very poor due to dense vegetation of tall grasses and weeds. Only the portion of the site located along proposed off-site improvement roads were subjected to investigation. No bedrock outcrops or features were observed. The survey identified a shell midden located along the southern edge of the proposed Siempre Viva Road. In addition, a series of shovel test pits and shovel scrapes placed along the west edge of Alta Road and the north and south edges of the proposed Siempre Viva Road identified a few scattered artifacts. The area of the shell midden was identified as having the greatest research potential and was therefore tested for significance.

The general configuration of the resource is shown in Figure 6.14–1, and the setting of the site is shown in Plates 6.14–1 and 6.14–2. Testing of the portion of Site SDI-8081 within the impact area consisted of the excavation of five surface scrapes, 38 shovel test pits, and one test unit. Due to very poor ground visibility, the surface scrapes were conducted instead of a general surface collection. The area of the shell midden was mapped and recorded, as shown in Figure 6.14–1.

6.14.2 Description of Field Investigations

Field investigations at Site SDI-8081 were conducted using the standard methodologies described in Section 5.0. A total of 22 artifacts and 1,873.2 grams of ecofacts were recovered during the current investigation. A summary of artifact recovery from the site is presented in Table 6.14–1, while detailed provenience information in provided in the artifact catalog (Appendix IV).

<u>Surface Recordation</u>

The majority of the site surface was covered with dense, tall grasses; consequently, surface visibility was poor across most of the survey area except for the dirt roads. To account for poor ground visibility, five surface scrapes were placed throughout the impact area of the site according to the sampling design discussed in Section 5.0. The locations of these surface scrapes are illustrated in Figure 6.14–1.

The surface scrapes, summarized in Table 6.14–1 and detailed in Table 6.14–2, yielded only four artifacts (three MGM flakes and one FGM flake) and 153.6 grams of marine shell. The shell midden area contained less dense vegetation than the surrounding area, resulting in better ground visibility than the remainder of the site. The shell midden was mapped along the southern edge of the proposed location of Siempre Viva Road, approximately 168 meters (550 feet) west of Alta Mira Road, the location of which is illustrated in Figure 6.14–1. The portion of the site within the impact area measured approximately 194 meters (636 feet) east/west by 32 meters (103 feet) north/south covering approximately 5,228 square meters (56,273 square feet).

Subsurface Excavation

The potential for subsurface cultural deposits within the portion of Site SDI-8081 to be impacted was investigated through the excavation of a total of 38 STPs. Shovel test pits were excavated along the proposed road alignments either bordering or crossing through the site area. The locations of the STPs are shown in Figure 6.14–1. All shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters, unless a culturally sterile level or bedrock was encountered. Seven of the 38 STPs excavated at Site SDI-8081 were positive for cultural material (STPs 2, 11, 13, 21, 22, 23, and 29). The majority of these STPs were associated with the shell midden identified along the southern edge of the proposed Siempre Viva Road alignment. Shovel Test Pit 30 yielded a single animal bone; however, there was no indication it had been culturally modified. A summary of recovery from the STPs at Site SDI-8081 is presented in Table 6.14–1, and detailed excavation data is provided in Table 6.14–3.

Based on the results of the surface inspection and shovel tests, the extent of the shell midden spreads across the proposed location of Siempre Viva Road and further to the south, extending outside of the alignment and beyond the area involved in the current study. Subsurface testing of the portion of the site within the impact area continued with the excavation of one standard one-meter-square test unit. Test Unit 1 (TU 1) was placed just south of the proposed location of Siempre Viva Road. While the road alignment provided to BFSA by the project engineers, Kimley-Horn and Associates, Inc., is the latest alignment proposal, the final placement of Siempre Viva Road has not been specified according to County-specific project requirements. Therefore, the test unit was placed slightly to the south of the proposed alignment to sample the area considered to have the greatest potential to produce subsurface deposits, as identified by the STPs and the surface marine shell. Should the placement of the road alignment shift, a data recovery program is recommended to mitigate impacts to the portion of the shell midden to be disturbed. The location of the test unit is illustrated in Figure 6.14–1.

The test unit was excavated in standard decimeter levels to subsoil, and all removed soils were sifted through one-eighth-inch mesh hardware cloth. Recovery from TU 1 consisted of 13 lithic artifacts (12 flakes and one flake scraper) and 1,657.6 grams of marine shell. Cultural material was recovered to a maximum depth of 60 centimeters in TU 1, where hard clay/decomposed granite (DG) was encountered. Recovery from the test unit is summarized in Table 6.14–1 and detailed by depth in Table 6.14–4.

The soil from TU 1 was characterized was a moderately compact, very dark grayish brown (10YR 3/2) clay loam to a depth of approximately 22 centimeters, overlying a very compact, brown (10YR 5/3) clay subsoil with small cobble/DG inclusions to the maximum depth of the unit at 60 centimeters. The north wall of TU 1 is illustrated in Figure 6.14–2 and pictured in Plate 6.14–2.

6.14.3 Laboratory Analysis

Laboratory analysis for SDI-8081 included the standard procedures described in Section 5.0 of this report. All artifacts and ecofacts recovered from field investigations conducted at the site were returned to the laboratory facility of BFSA to be cataloged and analyzed. Recovery from Site SDI-8081, including 22 artifacts and 1,873.2 grams of marine shell, is summarized in Table 6.14–1 and detailed in Appendix IV.

Lithic Artifact Analysis

Twenty-two lithic artifacts were recovered from the current program at SDI-8081. Lithic production waste accounted for the largest category of artifacts (86.36%; N=19), all of which were flakes. The remaining collection consisted of two precision tools (9.10%) and one expedient tool (4.55%). Activities indicated by the artifacts recovered from the site include procurement, processing, and maintenance of lithic tools. The lithic artifact collection included a small range of material types including FGM, MGM, and quartzite, all of which are locally available. No temporally diagnostic artifacts were recovered.

Marine Shell Analysis

A total of 1,873.2 grams of marine shell were recovered during the current program at SDI-8081. *Chione* sp. accounted for the largest portion of the marine shell recovery, representing 60.53% (N=1,133.9 grams), followed by *Ostrea lurida* (13.04%; N=244.2 grams). Recovery also included scant amounts of a wide variety of gastropods, bivalves, and crustaceans. Although a wide range of marine resources was recovered from the shell midden, the most predominant species are found in coastal bay/mud flats and sandy beaches, not rocky shorelines (Table 6.14–5). Burnt items represented 0.77% (N=12.6 grams), indicating that consumption of these resources was conducted on site. Generally, the recovery of all marine resources decreased with depth as excavations continued in TU 1 (Table 6.14–4), except for a slight increase in *Donax* from the first to second levels. While large percentages of *Chione* is usually indicative of an Archaic Period occupation and, conversely, *Donax* is though to be an indicator of Late Prehistoric Period occupations in the northern San Diego County region (Laylander 1993; Byrd 1998), recent excavations to the north of the current project have shown that shell middens do not follow the same patterns in the Otay Mesa area (Gilbert et al. 2006).

6.14.4 Discussion

Determining or confirming overall site dimensions of SDI-8081 was not part of the scope of the current testing program. Subsurface testing of SDI-8081 was conducted only in the portion of the site that may be impacted by the proposed Otay Business Park Project. These impacts involve proposed off-site improvements consisting of road and utility developments, the planned alignments of which will impact a portion of SDI-8081. The current program demonstrated that the portion of the site that may be impacted contains of two types of material expressions. The first is the presence of an approximately 219 m^2 (2,362 ft^2), moderately deep shell midden containing a wide variety of marine species and scant quantities of lithic artifacts. The shell midden, as identified during this study, is located just off of the southern edge of the proposed location of Siempre Vive Road, approximately 168 meters (550 feet) west of Alta Mira Road. The second expression is the presence of shallow, isolated lithic artifacts (flakes) found in some of the shovel test pits outside of the midden area. Site SDI-8081 represented elements commonly characteristic of Otay Mesa sites. These elements included scant lithic flake recovery with very minimal depth associated with widespread cobble lense quarrying found throughout the Otay Mesa area.

Test unit and shovel test excavations indicate that the shell midden subsurface deposit extends to a depth of 60 centimeters. No diagnostic artifacts or ecofacts were identified. Although there was little variety in the artifact types recovered, Site SDI-8081 exhibited a moderately deep, dense, and varied marine shell assemblage, indicating that the site was occupied for long durations. Therefore, the shell midden portion of the site does exhibit additional research potential. Additional portions of the site reflect the usual artifact “smear” with no research potential, as described in the *Management Plan for Otay Mesa Prehistoric Resources, San Diego, California* (Gallegos et al. 1998; see Section 5.0).

The shell midden portion of the site is interpreted as a habitation site where activities included the procurement, production, and maintenance of lithic resources and the processing and consumption of marine resources. No temporally diagnostic artifacts, which would aid in identifying the site to a particular time period, were recovered. However, the large quantity of lithic tools recovered suggests repeated use of this location. As a result, the site does exhibit additional research potential.

6.14.5 Summary

The analysis of the prehistoric cultural materials recovered from the tested portion of Site SDI-8081 revealed a significant cultural deposit extending to a depth of 60 centimeters. The recovered lithic artifacts indicate that site activities were focused on the procurement, processing, and maintenance of lithic tools. The depth and density of recovered ecofacts indicate that shellfish resources were processed and consumed at the site, and represent prolonged occupation.

The portion of Site SDI-8081 associated with the shell midden exhibits the potential for subsurface deposits and/or buried cultural features. Since the testing and evaluation program identified an intact subsurface deposit containing artifacts and ecofacts, the site has yielded information and is considered to have additional research potential. Based on the information derived from the current testing program, this portion of Site SDI-8081 is considered an important resource according to criteria listed in *County of San Diego, Guidelines for*

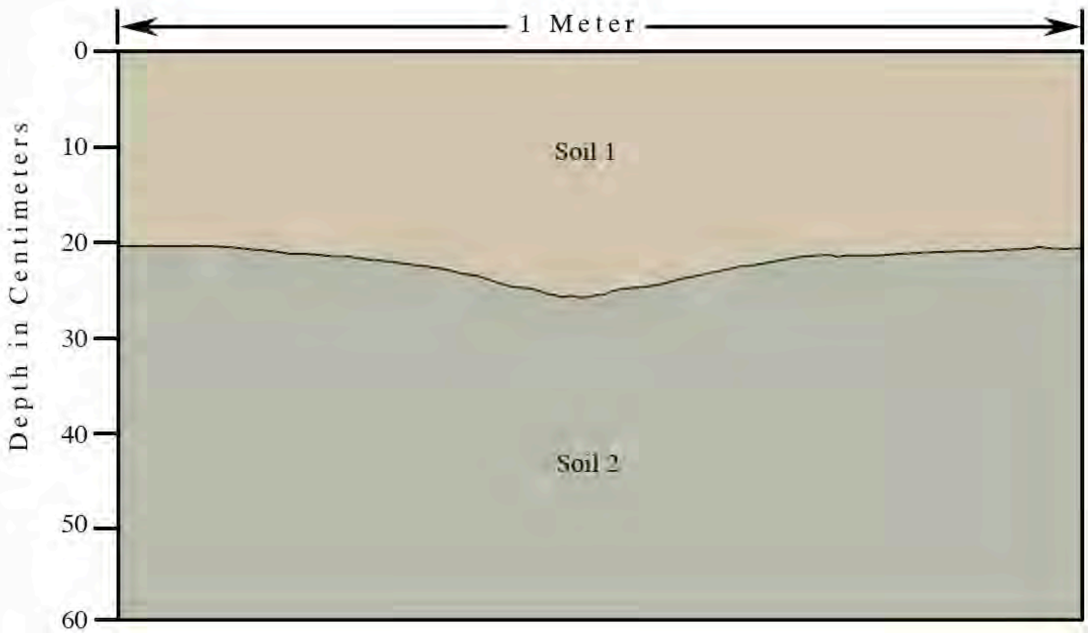
Determining Significance, Cultural Resources: Archaeological and Historic Resources (September 26, 2006; Revised December 5, 2007).

<u>Figure 6.14–1</u>
Excavation Location Map — Site SDI-8081

(Deleted for Public Review; Bound Separately)

Plate 6.14–1 Overview of Site SDI-8081, facing northeast.

Plate 6.14–2 North wall profile of Test Unit 1, Site SDI-8081.



Soil Types

1 Moderately compact, very dark grayish brown (10YR 3/2) clay loam

2 Very compact, brown (10YR 5/3) clay

0 10 20 cm

Figure 6.14–2

Test Unit 1 North Wall Profile, SDI-8081

The Otay Business Park Project

TABLE 6.14–1
Artifact Summary, Site SDI-8081

Recovery Category	Surface Scrapes	Shovel Tests	Test Unit	Total	Percent
Ecofacts (weight in grams):					
Gastropodia:					
Cerithidea californica	–	–	4.2	4.2	0.22
Littorina sp.	–	–	0.1	0.1	0.01
Nassarius tegula	–	–	11.6	11.6	0.62
Nassarius tegula (burnt)	–	–	1.1	1.1	0.06
Olivella biplicata	–	–	<0.1	<0.1	<0.01
Terebra sp.	–	–	2.1	2.1	0.11
Bivalvia:					
Amiantis callosa	–	–	<0.1	<0.1	<0.01
Anomia peruviana	–	–	<0.1	<0.1	<0.01
Argopecten sp.	–	–	23.9	23.9	1.28
Argopecten sp. *(burnt)*	–	–	0.2	0.2	0.01
Chione californiensis	–	–	138.5	138.5	7.39
Chione fluctifraga	–	–	6.1	6.1	0.33
Chione undatella	–	–	604.7	604.7	32.28
Chione undatella (burnt)	–	–	1.6	1.6	0.09
Chione sp.	–	–	382.3	382.3	20.41
Chione sp. *(burnt)*	–	–	0.7	0.7	0.04
Crucibulum spinosum	–	–	1.8	1.8	0.10
Crucibulum spinosum (burnt)	–	–	0.1	0.1	0.01
Donax gouldii	–	–	52.3	52.3	2.79
Laevicardium elatum	–	–	33.0	33.0	1.76
Modiolus sp.	–	–	<0.1	<0.1	<0.01
Mytilus sp.	–	–	0.1	0.1	0.01
Ostrea lurida	–	–	236.2	236.2	12.61
Ostrea lurida (burnt)	–	–	8.0	8.0	0.43
Tagelus sp.	–	–	24.3	24.3	1.30
Tagelus sp. *(burnt)*	–	–	0.1	0.1	0.01
Tivela sulturom	–	–	16.1	16.1	0.86

Recovery Category	Surface Scrapes	Shovel Tests	Test Unit	Total	Percent
Crustecea:					
Brachyura sp.	–	–	0.2	0.2	0.01
Indeterminant shell	–	–	107.5	107.5	5.74
Indeterminant shell (burnt)	–	–	0.8	0.8	0.04
Unidentified shell	153.6	61.9	–	215.5	11.50
Unidentified bone	–	0.1	–	0.1	0.01
Total Ecofacts:	153.6	62.0	1657.6	1873.2	100.03
Percent of Ecofacts:	8.20	3.31	88.49	100.00	
Artifacts:					
Expedient Tools:					
Utilized Flake(s)	–	1	–	1	4.55
Lithic Production Waste:					
Flake(s)	4	3	12	19	86.36
Precision Tools:					
Flake Scraper(s)	–	–	1	1	4.55
Scraper(s)	–	1	–	1	4.55
Total Artifacts:	4	5	13	22	100.01
Percent of Artifacts:	18.18	22.73	59.09	100.00	

TABLE 6.14–2
Surface Scrape Recovery, Site SDI-8081

Surface Scrape	Quantity/ Weight (g)	Artifact Type	Material Type	Catalog #
1	No Recovery			123
2	No Recovery			124
3	No Recovery			125
4	No Recovery			126
5	1	Flake(s)	Fine-grained Metavolcanic	127
	3	Flake(s)	Medium-grained Metavolcanic	128
	153.6 g.	Shell	Unidentified	129

**Depth for all Shovel Scrapes was 0–3 centimeters*

TABLE 6.14–3

Shovel Test Excavation Data, Site SDI-8081

Shovel Test	Depth (cm)	Quantity/ Weight (g)	Artifact Type	Material Type	Catalog #
1	0-10	No Recovery			1
	10-20				2
	20-30				3
2	0-10	1	Flake(s)	Medium-grained Metavolcanic	4
	10-20	No Recovery			5
	20-30				6
	30-40				7
3	0-10	No Recovery			8
	10-20				9
	20-30				10
4	0-10	No Recovery			11
	10-20				12
	20-30				13
5	0-10	No Recovery			14
	10-20				15
	20-30				16
6	0-10	No Recovery			17
	10-20				18
	20-30				19
7	0-10	No Recovery			20
	10-20				21
	20-30				22
8	0-10	No Recovery			23
	10-20				24
	20-30				25
9	0-10	No Recovery			26
	10-20				27
	20-30				28
10	0-10	No Recovery			29
	10-20				30
	20-30				31
11	0-10	<0.1	Shell	Unidentified	32
	10-20	No Recovery			33
	20-30				34
12	0-10	No Recovery			35
	10-20				36
	20-30				37
13	0-10	No Recovery			38
	10-20	1 / 11.7	Utilized Flake(s)	Medium-grained Metavolcanic	39

Shovel Test	Depth (cm)	Quantity/ Weight (g)	Artifact Type	Material Type	Catalog #
	10-20	1	Flake(s)	Medium-grained Metavolcanic	40
	20-30	No Recovery			41
	30-40				42
14	0-10	No Recovery			43
	10-20				44
	20-30				45
15	0-10	No Recovery			46
	10-20				47
	20-30				48
16	0-10	No Recovery			49
	10-20				50
	20-30				51
17	0-10	No Recovery			52
	10-20				53
	20-30				54
18	0-10	No Recovery			55
	10-20				56
	20-30				57
19	0-10	No Recovery			58
	10-20				59
	20-30				60
20	0-10	No Recovery			61
	10-20				62
	20-30				63
21	0-10	1 / 250.1	Scraper(s)	Medium-grained Metavolcanic	64
	10-20	No Recovery			65
	20-30				66
22	0-10	25.5	Shell	Unidentified	67
	10-20	15.4	Shell	Unidentified	68
	20-30	10.2	Shell	Unidentified	69
	30-40	3.2	Shell	Unidentified	70
	40-50	6.0	Shell	Unidentified	71
	50-60	1.6	Shell	Unidentified	72
	60-70	No Recovery			73
23	0-10	No Recovery			74
	10-20	<0.1	Shell	Unidentified	75
	20-30	No Recovery			76
	30-40				77
24	0-10	No Recovery			78
	10-20				79
	20-30				80
25	0-10	No Recovery			81

Shovel Test	Depth (cm)	Quantity/ Weight (g)	Artifact Type	Material Type	Catalog #
	10-20				82
	20-30				83
26	0-10	No Recovery			84
	10-20				85
	20-30				86
27	0-10	No Recovery			87
	10-20				88
	20-30				89
28	0-10	No Recovery			90
	10-20				91
	20-30				92
29	0-10	No Recovery			93
	10-20	1	Flake(s)	Medium-grained Metavolcanic	94
	20-30	No Recovery			95
30	0-10	0.1	Bone	Animal	96
	10-20	No Recovery			97
	20-30				98
31	0-10	No Recovery			99
	10-20				100
	20-30				101
32	0-10	No Recovery			102
	10-20				103
	20-30				104
33	0-10	No Recovery			105
	10-20				106
	20-30				107
34	0-10	No Recovery			108
	10-20				109
	20-30				110
35	0-10	No Recovery			111
	10-20				112
	20-30				113
36	0-10	No Recovery			114
	10-20				115
	20-30				116
37	0-10	No Recovery			117
	10-20				118
	20-30				119
38	0-10	No Recovery			120
	10-20				121
	20-30				122

TABLE 6.14–4
Summary of Test Unit Recovery by Depth, Site SDI-8081

Recovery Category	Depth (in centimeters)						Total	Percent
	0-10	10-20	20-30	30-40	40-50	50-60		
Ecofacts (weight in grams):								
Gastropodia:								
Cerithidea californica	3.9	0.1	<0.1	0.2	–	–	4.2	0.25
Littorina sp.	–	0.1	<0.1	–	–	–	0.1	0.01
Nassarius tegula	6.3	3.3	1.1	0.3	–	0.6	11.6	0.70
Nassarius tegula (burnt)	–	0.3	–	–	0.8	–	1.1	0.07
Olivella biplicata	–	<0.1	–	–	–	–	<0.1	<0.01
Terebra sp.	0.6	1.3	0.2	–	–	–	2.1	0.13
Bivalvia:								
Amiantis callosa	–	–	–	–	–	<0.1	<0.1	<0.01
Anomia peruviana	<0.1	–	–	–	–	–	<0.1	<0.01
Argopecten sp.	9.7	9.4	3.4	0.6	0.3	0.5	23.9	1.44
Argopecten sp. (burnt)	0.1	0.1	–	–	–	–	0.2	0.01
Chione californiensis	37.6	71.0	14.6	9.6	2.7	3.0	138.5	8.36
Chione fluctifraga	3.2	0.3	0.5	–	–	2.1	6.1	0.37
Chione undatella	258.9	248.3	48.8	22.8	17.1	8.8	604.7	36.48
Chione undatella (burnt)	1.1	0.2	–	0.3	–	–	1.6	0.10
Chione sp.	193.2	140.7	25.5	10.5	6.0	6.4	382.3	23.06
Chione sp. (burnt)	0.2	0.4	–	–	0.1	–	0.7	0.04
Crucibulum spinosum	0.8	0.8	–	0.1	0.1	<0.1	1.8	0.11
Crucibulum spinosum (burnt)	–	0.1	–	–	–	–	0.1	0.01
Donax gouldii	18.2	24.2	3.6	3.3	1.4	1.6	52.3	3.16
Laevicardium elatum	22.4	10.1	0.4	0.1	–	–	33.0	1.99

TABLE 6.14–4
Summary of Test Unit Recovery by Depth, Site SDI-8081

Recovery Category	Depth (in centimeters)						Total	Percent
	0-10	10-20	20-30	30-40	40-50	50-60		
Modiolus sp.	–	–	–	–	<0.1	<0.1	<0.1	<0.01
Mytilus sp.	0.1	–	–	–	–	–	0.1	0.01
Ostrea lurida	97.4	84.5	25.9	12.0	9.9	6.5	236.2	14.25
Ostrea lurida (burnt)	4.3	2.3	0.7	0.5	0.1	0.1	8.0	0.48
Tagelus sp.	8.8	8.6	2.9	2.0	1.3	0.7	24.3	1.47
Tagelus sp. (burnt)	0.1	–	–	–	<0.1	–	0.1	0.01
Tivela sulturom	14.1	0.6	1.4	–	–	–	16.1	0.97
Crustecea:								
Brachyura sp.	0.1	0.1	–	–	–	–	0.2	0.01
Indeterminant	46.7	35.0	10.2	5.3	6.6	3.7	107.5	6.49
Indeterminant (burnt)	–	0.8	–	–	–	<0.1	0.8	0.05
Total Ecofacts:	727.8	642.6	139.2	67.6	46.4	34.0	1657.6	100.03
Percent of Ecofacts:	43.91	38.77	8.40	4.08	2.80	2.05	100.01	
Artifacts:								
Lithic Production Waste:								
Flake(s)	6	4	–	2	–	–	12	92.31
Precision Tools:								
Flake Scraper(s)	–	–	–	1	–	–	1	7.69
Total Artifacts:	6	4	–	3	–	–	13	100.00
Percent of Artifacts:	46.15	30.77	–	23.08	–	–	100.00	

TABLE 6.14–5

Habitats of the Mollusks Most Represented at SDI-8081

Scientific Name	Habitat
Chione sp.	Bay/Mud Flats
Laevicardium sp.	Bay/Mud Flats
Donax sp.	Sandy Beach
Ostrea sp.	Bay/Mud Flats
Argopecten sp.	Bay/Mud Flats
Tagelus sp.	Bay/Mud Flats
Tivela sp.	Sandy Beach

6.15 Site SDI-12,888H

6.15.1 Site Description

Site SDI-12,888H is a previously recorded historic scatter site located north of SDI-8081 and west of SDI-11,799/H, at the southwest corner of Airport Road and Alta Mira adjacent to the relatively level proposed off-site improvements area (Figure 6.0–1). Site SDI-12,888H was first recorded by Ogden and Gallegos in 1993, and was described as an historic trash scatter including porcelain, aqua glass, purple glass, and whiteware (SCIC site forms; Appendix II). Given the proximity to Site SDI-11,799/H, it is possible these two sites reflect one larger historical resource; however, SCIC records indicate it was mapped as a separate site. The site was not relocated at its mapped location during a 2005 study for the Otay Crossings Commerce Park (Robbins-Wade 2006), nor was it relocated during the current study. The SCIC records indicate that SDI-12,888H has never been tested for significance, and the recorded location is in close proximity to the proposed location of the southwest corner of the Airport Road/Alta Mira Road intersection. To determine potential impacts as a result of the proposed road alignments, the area along the northeast site boundary was subjected to subsurface testing as part of the current investigation. The testing did not occur inside the previously recorded boundaries of the site, but slightly to the north, between the site boundary and the southern edge of the proposed Airport Road right-of-way (see Figure 6.15–1). The recorded location of the site sits on relatively level terrain at an elevation of approximately 538 feet AMSL (Figure 6.0–1). Disturbances in the area include disking activities associated with past agricultural practices; erosion may have also affected the site. Dense vegetation in the area, consisting of tall grasses, resulted in very poor ground visibility. No surface evidence of the site in the proximity of the proposed road alignment was observed during the survey. The general configuration of the resource, as previously recorded, is shown in Figure 6.15–1. The current evaluation of the northern periphery of Site SDI-12,888H consisted of a review of the surface for cultural remains, one surface scrape, and the excavation of four shovel test pits (STPs), the locations of which are shown on Figure 6.15–1.

6.15.2 Description of Field Investigations

Field investigations in the proximity of Site SDI-12,888H were conducted using the standard methodologies described in Section 5.0. No artifacts were recovered during the current investigation. Although no artifacts were recovered from the current investigation, a catalog documenting all investigation data is provided in Appendix IV.

<u>*Surface Recordation*</u>

Although ground visibility was very poor throughout the site area, the entire surface was inspected for artifacts and features. To account for poor ground visibility, one surface scrape was placed in the northern periphery of the site, adjacent to the proposed road alignment (Plate 6.15–1). No artifacts were recovered as a result of the surface collection or the surface scrape.

The location of the surface scrape, in relationship to the previously recorded boundary of the site and the proposed road alignment, is illustrated in Figure 6.15–1.

<u>Subsurface Excavation</u>

The potential for subsurface cultural deposits along the northern periphery of Site SDI-12,888H was investigated through the excavation of four STPs. Shovel test pit locations were placed between the recorded boundary of SDI-12,888H and the southern edge of the proposed Airport Mesa Road alignment, and were excavated according to the field methodology discussed in Section 5.0. The locations of the STPs in relationship to the recorded site boundaries are illustrated in Figure 6.15–1. All shovel tests were excavated in decimeter levels to a minimum depth of 30 centimeters, unless a culturally sterile level or bedrock was encountered (Plate 6.15–1). None of the four STPs excavated near Site SDI-12,888H was positive for cultural material.

6.15.3 Discussion and Summary

The area along the northeastern boundary of the previously recorded location of Site SDI-12,888H exhibits no surface or subsurface cultural deposits, no potential for buried cultural features, and no additional research potential. Because no testing was performed within the recorded boundaries of SDI-12,888H, no analysis of the significance of the site can be made at this time. However, the current program was able to demonstrate that no surface or subsurface elements of the site are located along the edges of the proposed Airport Road and Alta Mira Road corridors.

Plate 6.15–1 View of Surface Scrape and STP near SDI-12,888H.

<u>Figure 6.15–1</u>

Excavation Location Map — Site SDI-12,888H

(Deleted for Public Review; Bound Separately)

7.0 DISCUSSION

The cultural resources study of the Otay Business Park consisted of an archaeological survey and program of site evaluations. The cultural resources identified within the project either by previous researchers or as a consequence of the current survey are listed in Table 7.0–1 below.

TABLE 7.0–1

Cultural Resources Located within the Otay Business Park Project

Cultural Resource	Evaluation
Previously Recorded Sites:	
SDI-8074 (no surface evidence)	Tested/ Not Significant
SDI-8075 (relocated)	Tested/ Significant **(Mitigation Complete)**
SDI-8076 (no surface evidence)	Tested/ Not Significant**
SDI-8077 (relocated)	Tested/ Significant **(Mitigation Complete)**
SDI-8078 (relocated)	Tested/ Significant **(Mitigation Complete)**
SDI-8079 (relocated)	Tested/ Not Significant**
SDI-8080 (relocated)	Tested/ Not Significant**
SDI-8081 (relocated)*	**Tested/ Significant (Further Mitigation Required)***
SDI-8082 (relocated)	Tested/ Not Significant**
SDI-11,798 (no surface evidence)	Tested/ Significant **(Mitigation Complete)**
SDI-11,799/H (relocated)	**Tested/ Significant (Mitigation Required)**
Newly Recorded Sites:	
SDI-17,962	Tested/ Significant **(Mitigation Complete)**
SDI-17,963	**Tested/ Significant (Mitigation Required)**
SDI-17,964	Tested/ Significant **(Mitigation Complete)**
SDI-17,965	Tested/ Significant **(Mitigation Complete)**
SDI-17,966/H	Tested/ Significant **(Mitigation Complete)**

Cultural Resource	Evaluation
SDI-17,967	Tested/ Significant **(Mitigation Complete)**

**Located in off-site improvement area. Includes only a portion of the site.*
***Previously evaluated; not tested by BFSA as part of the current study.*

To evaluate the potential impacts to cultural resources represented by the proposed development, a testing program was implemented to determine whether any of the resources are significant according to San Diego County and CEQA criteria. While 23 total resources were identified within the project boundaries, ten of these (four previously recorded sites and six isolated artifacts) were determined to be not significant and were, therefore, not included in current testing program. The information gathered during testing and documentation of the remaining 13 resources within the project area indicates that the majority of these were utilized primarily as temporary camps and limited-use resource processing locations within the known prehistoric subsistence pattern in the area (Gallegos et al. 1998). All of the sites had been previously disturbed, and each site has been subjected to a variety of disturbances, including erosion, grading activities, agricultural uses, vehicle traffic, and pedestrian traffic. The majority of the sites do not possess a subsurface component. Where subsurface deposits were identified, these were characterized as shallow and low density deposits, which may be a result of the disturbances listed above. In addition to these 23 resources, one historic site (SDI-12,888H) was recorded very near the boundaries of the proposed off-site improvements area. The northern periphery of this site was subjected to surface inspection and subsurface testing to determine if any elements of the site were present within the impact area. The current program determined that no aspects of SDI-12,888H are present within the off-site improvements area. No significance testing was conducted within the recorded boundaries of this site, as it falls entirely outside of the current project limits.

Site SDI-11,799/H is a multi-component site located in the northwest corner of the project area. The prehistoric component of the site, consisting of a minimal recovery of lithic artifacts and marine shell ecofacts, was determined to be significant according to San Diego County criteria due to the information it yielded during the testing; however, the prehistoric component holds no further research potential. The historic component of the site is significant according to San Diego and CEQA standards. The testing program indicated that an intact, subsurface deposit extending to 150 centimeters below the surface and dates to the late 19^{th} century exists at the site. Historic research indicates a structure, owned by Daniel McCarthy who purchased the property in 1889, was present at the location of SDI-11,799/H. Although the area has been previously plowed, the deposit below the plow zone appears to be intact and undisturbed. Due to the rarity of such deposits in the Otay Mesa area, Site SDI-11,799/H may be able to assist in answering important research questions pertaining to this time period.

Site SDI-17,963 is a lithic resource extraction, processing, and maintenance site. The site is located in close proximity to Sites SDI-17,964, SDI-17,967, and SDI-8077. These sites and SDI-17,963 are all located at cobble lenses, locations of exposed cobbles used by prehistoric populations as raw lithic material. Cobble lenses were "quarried" to the extent that cobbles were broken open to search for useable materials by all prehistoric groups in the area. Although the majority of these types of sites within the Otay Mesa area lack any significant subsurface deposit (Gallegos et al. 1998), Site SDI-17,963 exhibited a subsurface deposit extending to approximately 42 centimeters below the surface. In addition, the subsurface testing demonstrated that the deposit is not isolated, but rather fairly evenly distributed below the surface artifact scatter. This indicates that lithic resource extraction, processing, and maintenance at this site may have occurred for very long periods of time, possibly thousands of years. Because of the breadth and depth of the lithic artifact recovery, Site SDI-17,963 may be able to assist in answering important research questions pertaining to prehistoric lithic resource procurement patterns. The archaeological record has documented changes in subsistence patterns through time. A larger sampling of the site may indicate changing preferences in lithic procurement and production techniques through time.

Sites SDI-17,964, SDI-17,967, and SDI-8077 consisted of moderate to dense surface scatters and shallow subsurface deposits. These sites were located at exposed cobble lenses where prehistoric populations would have gathered raw lithic material for tool production. These sites have been interpreted as lithic procurement and tool production and maintenance sites. Unfortunately, no temporally diagnostic artifacts were recovered and there does not appear to be any indication of residential occupation in the form of darkened midden soil, features, pottery, or ecofacts. Although they yielded moderate to dense lithic recoveries, the nature of the sites indicate they have no additional research potential. However, due to the information obtained during the testing program, these sites are considered significant according to San Diego County criteria.

Sites SDI-17,962, SDI-8074, SDI-8075, SDI-8078, and SDI-11,798 represent limited lithic tool manufacture and maintenance sites. Although SDI-8074 and the other three previously recorded sites had either no recovery or extremely sparse recoveries, previous archaeological investigations had documented lithic artifacts within their site boundaries. The current testing program indicated they exhibit no subsurface deposits, darkened midden soils, features, ecofacts, or pottery. There is no evidence that these locations were used as temporary campsites, or if any other activities took place at these sites.

Site SDI-8081 is located within the off-site improvements area along the western edge of Alta Mira Road. This site is bisected by Siempre Viva Road Subsurface testing of SDI-8081 occurred only in areas to be impacted by proposed off-site improvements consisting of road and utility developments. Therefore, overall site dimensions within SDI-8081 were not part of the scope of the testing program for this site. The testing demonstrated that the portion of Site SDI-8081 to be impacted by off-site improvements consists of two types of material expressions. The first is the presence of a moderately deep shell midden containing a wide variety of shell species, indicating that the site was occupied for long durations. Therefore, the shell midden portion of the site does exhibit additional research potential. The second expression is the presence of shallow, isolated flakes that represent common cobble lens quarrying throughout the Otay Mesa area. The shell midden portion of the site exhibits additional research potential and is considered an important resource according to criteria listed in *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007).

One of the multi-component sites, SDI-17,966/H, represents a mid-20th century to modern-day trash dump and push pile located at a prehistoric temporary campsite. No absolute dates were retrieved from the small number of mostly unidentifiable historic period artifacts, and no historic structures, foundations, or features were identified. The prehistoric component yielded a shallow, scant lithic and marine shell deposit. In addition, it appears that whatever shallow prehistoric, or historic deposits may have been present have been disturbed and pushed into piles toward the east end of the site. Neither the historic nor prehistoric components have additional research potential. However, due to the information obtained during the testing program, both components are considered significant according to San Diego County criteria.

In addition to the prehistoric components of SDI-17,966/H and SDI-11,799/H, Site SDI-17,965 possessed a limited amount of lithic material in conjunction with marine shell ecofacts. Although these sites contained isolated subsurface prehistoric deposits, none possessed significant depth or significant artifact and ecofact recoveries. Due to the presence of marine shell and shell fragments, some of which have been burned, site activities appear to include marine resource preparation and consumption, in addition to limited lithic tool production and maintenance. These sites do not possess additional research potential and, therefore, are not considered significant resources. However, due to the information obtained during the testing program, these sites are considered significant according to San Diego County criteria.

8.0 SITE SIGNIFICANCE SUMMARY AND IMPACT ANALYSIS

The Otay Business Park cultural resources study was conducted to provide an inventory of archaeological sites within the project and to assess resources for significance and evaluate potential impacts represented by the planned development. As has been noted previously, the work conducted by BFSA at the Otay Business Park Project and off-site improvements area is one of several cultural resource studies for the property. The result of these studies has been the identification of 11 previously recorded resources (SDI-8074, SDI-8075, SDI-8076, SDI-8077, SDI-8078, SDI-8079, SDI-8080, SDI-8081, SDI-8082, SDI-11,798, and SDI-11,799/H) and the recording of 12 new resources (Isolates P-37-027656 through -027661 and SDI-17,962 through SDI-17,967). Sites SDI-8076, SDI-8079, SDI-8080, and SDI-8082 were previously tested and found to be not significant according to CEQA and prevailing County criteria during their respective testing programs. In addition, the six isolated artifacts were considered not significant and were not subjected to additional study. All of these resources have been registered at the South Coastal Information Center and site update forms have been prepared as necessary (Appendix I). The goal of the archaeological study is to determine the potential impacts to cultural resources associated with grading for development. The project, as proposed by the applicant, will consist of subdividing the project area into 61 industrial lots.

Within the project boundaries and off-site improvements areas, 13 resources (SDI-8074, SDI-8075, SDI-8077, SDI-8078, SDI-8081, SDI-11,798, SDI-11,799/H, SDI-17,962, SDI-17,963, SDI-17,964, SDI-17,965, SDI-17,966/H, and SDI-17,967) have been tested and evaluated during the current study in accordance with the guidelines of the County of San Diego and in compliance with the California Environmental Quality Act of 1970 (CEQA). For this review, the *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007) criteria were utilized as the foundation for resource evaluations. This significance guideline synthesizes both Section 15064.5 of CEQA and the County of San Diego's Resource Protection Ordinance (RPO) criteria. The significance criteria used to evaluate the Otay Business Park sites is listed in Section 8.1. As instructed by San Diego County, the significance determinations are listed according to CEQA, RPO, and San Diego County guidelines (Gail Wright, personal communication 9/14/06).

The results of the evaluations are provided in the individual site reports as well as summarized in Table 8.0–1. A total of three sites that were tested possess additional research potential and are recommended as significant based on CEQA and San Diego County criteria. These three sites (SDI-8081, SDI-11,799/H and SDI-17,963) may potentially provide data that would be applicable to numerous regionally important research topics and additional mitigation measures for impacts are recommended. A total of nine complete sites (SDI-8075, SDI-8077, SDI-8078, SDI-11,798, SDI-17,962, SDI-17,964, SDI-17,965, SDI-17,966/H, and SDI-17,967) and the prehistoric component of another site (SDI-11,799/H) do not possess additional research potential but did yield information during the testing program. These sites are recommended as significant based solely on San Diego County criteria. The remaining resource (SDI-8074) yielded no information and was therefore not significant according to either CEQA or County criteria.

One additional site (SDI-12,888H) was recorded in close proximity to the off-site improvements area. The northern periphery of this site was subjected to survey and subsurface testing to determine if any elements of the site are present within the impact area. The current program determined that this site falls entirely outside of the proposed project boundaries. As the site itself was not subjected to testing and evaluation, no recommendations regarding the significance of SDI-12,888H can be made at this time.

<u>TABLE 8.0–1</u>
Evaluation Summary for Tested Cultural Resources

Site	Evaluation	Mitigation Required
SDI-17,962	Significant	Mitigation Complete
SDI-17,963	Significant	Yes
SDI-17,964	Significant	Mitigation Complete
SDI-17,965	Significant	Mitigation Complete
SDI-17,966/H	Significant	Mitigation Complete
SDI-17,967	Significant	Mitigation Complete
SDI-8074	Not Significant	No
SDI-8075	Significant	Mitigation Complete
SDI-8076*	Not Significant	No
SDI-8077	Significant	Mitigation Complete
SDI-8078	Significant	Mitigation Complete
SDI-8079*	Not Significant	No
SDI-8080*	Not Significant	No
SDI-8081	Significant	Yes
SDI-8082*	Not Significant	No
SDI-11,798	Significant	Mitigation Complete
SDI-11,799/H	Significant	Yes
SDI-12,888H**	Not Applicable	No

**Not evaluated by BFSA as part of the current study.*

***North periphery of site tested. No site components located. Tested area determined to be located outside of site boundary.*

Based on the information provided in the technical report, the following significance determinations were made for the resources within the project area that were tested as part of the current study:

Tested Resources (13):	**Number of Resources**	**Significant or Not Significant (CEQA, RPO, & County Guidelines)**
	3	Significant (CEQA & County)
	9	Significant (County)
	0	Significant (RPO)
	1	Not Significant

Due to the lack of temporally diagnostic artifacts and/or features, no secure prehistoric cultural affiliation could be made for any resources found within the project area. The entire collection of prehistoric sites produced only a small amount of shell and bone, which is striking in comparison to many sites west of Otay Business Park, where major occupations include noteworthy collections of shell and bone suitable for dating (Smith et al. 2004). The single significant historic resource within the project area (SDI-11,799/H) contains an adequate quantity of temporally diagnostic artifacts to make dating during the mitigation process a non-issue as opposed to possible tenuous dates for prehistoric cultural resources.

8.1 Evaluation Procedures

The cultural resources tested within the project were evaluated according to the County criteria, as stated previously. The characteristic consistently cited for sites evaluated as significant was the ability of the resource to produce information during the testing program. However, three of these sites (SDI-8081, SDI-11,799/H, and SDI-17,963) are additionally significant due to the potential of the subsurface deposit to produce further information potentially applicable to numerous regionally important research topics. None of the prehistoric sites tested contained the wide spectrum of feature-types, ceremonial areas, cultural deposits, or elements of material culture that represent a focused occupation by sizeable native populations for centuries, and thus none are considered significant. The series of sites at Otay Business Park are primarily temporary camps and limited-use areas associated with resource exploitation, although one of the sites represents a slightly longer and more intense utilization of raw lithic materials. Historically, the project does contain evidence of a homestead structure and activities typical of agricultural and ranching activities.

<u>Determining the Significance of Impacts to Archaeological and Historical Resources</u>

As part of the evaluation of resources at the Otay Business Park project, the term “historical resources” as described in CEQA shall include the following:

(1) A resource listed in, or determined to be eligible by, the State Historical Resources Commission, for listing in the California Register of Historical Resources (pub. Res. Code SS5024.1, Title 14 CCR, Section 4850 et seq.).

(2) A resource included in the local register of historical resources as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in an historical resources survey meeting the requirements in Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public

agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR, Section 4852) including the following:

(A) Is associated with the events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Is associated with the lives of persons important in our past;

(C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

(D) Has yielded, or may be likely to yield, information important in prehistory or history.

(4) The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(i) or 5024.1.

In addition, CEQA also states that impacts to a local community, ethnic, or social group must also be considered. If a resource is determined to be not important under these criteria, it is assumed that the resource cannot be significantly impacted and, therefore, mitigating measures are not warranted. However, any resources found to be important according to these criteria must be assessed for project-related actions that could directly or indirectly impact such resources. Impacts that adversely affect important resources are considered to be significant impacts for which mitigating measures are warranted.

Resources within the project were also evaluated against the listing information included in the County of San Diego's Resource Protection Ordinance (RPO). Sites that are considered to be regionally important may be eligible for RPO status. The criteria for RPO-eligible sites is as follows:

Significant prehistoric or historic sites: Location of past intense human occupation where buried deposits can provide information regarding important scientific research questions about prehistoric or historic activities that have scientific, religious, other ethnic value of local, regional, state, or federal importance. Such locations shall include, but not be limited to: any prehistoric or historic district, site, interrelated collection of features or artifacts, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places or the State Landmark Register; or included or eligible for inclusion, but not previously rejected, for the San Diego County Historical Site Board List; any area of past human occupation located on public or private land where important prehistoric or historic activities and/or events occurred; and any location of past or current sacred religious or ceremonial observances protected under Public Law 95-341, the American Indian Religious Freedom Act or Public Resources Code Section 5097.9, such as burial(s), pictographs, petroglyphs, solstice observatory sites, sacred shrines, religious ground figures, and natural rocks or places which are of ritual, ceremonial, or sacred value to any prehistoric or historic ethnic group.

In addition to the CEQA and County RPO significance guidelines, the criteria set forth in the *County of San Diego, Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources* (September 26, 2006; Revised December 5, 2007) has been included for further evaluation of significance:

1. Resources associated with events that have made a significant contribution to the broad patterns of California or San Diego County's history and cultural heritage.
2. Resources associated with the lives of persons important to our past, including the history of San Diego County or its communities.
3. Resources that embody the distinctive characteristics of a type, period, region (San Diego County), or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Resources that have yielded or may be likely to yield, information important in prehistory or history.
5. Districts are significant resource if they are composed of integral parts of the environment not sufficiently significant by reason of historical association or artistic merit to warrant individual recognition, but collectively compose an entity of exceptional historical or artistic significance, or outstandingly commemorate or illustrate a way of life or culture. A traditional cultural landscape is an example of a prehistoric district because

individual must be considered within the broader context of their association with one another.

6. Resource Protection Ordinance. Cultural resources must be evaluated for both the California Environmental Quality Act as outlined in criteria 1-4 above and the Resource Protection Ordinance pursuant to Article II of the ordinance (for specific RPO definitions see the RPO criteria listed above).
7. If human remains are discovered, the County Coroner shall be contacted. In the event that the remains are determined to be of Native American origin, the Most Likely Descendent, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains. A resource shall be considered significant if it contains any human remains interred outside of a formal cemetery.
8. Resources must retain enough of their historical character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated through the assessment of a cultural resource's attributes, and may include design, location, setting, materials, workmanship, feeling, and association. It must be judged with reference to the particular criteria under which a resource is proposed for eligibility (structural, architectural, artistic, historic location, archaeological site, historic district). Alterations over time to a resource or historic changes in its use may themselves have historical, cultural, or architectural significance.

8.2 Discussion of Significance

8.2.1 Discussion of Individual Site Significance

The testing program conducted at the Otay Business Park produced the information necessary to evaluate the resources according to the criteria presented in Section 8.1. The site evaluations are provided in the individual site reports included in Section 6.0. For all of the sites that have been evaluated as significant, the basis for the finding was the potential of the site to provide information that would contribute to local and regional research issues related to the prehistoric occupation of the project sites (CEQA, Section 15064.5, Criterion D & San Diego County Guidelines for Determining Significance Criterion 4). None of the sites that were tested were found to qualify as important under any other criteria of CEQA or as regionally important, nor were any sites listed on or eligible for the National Register of Historic Places. No sites were listed on the California Register of Historic Resources.

The sites were also reviewed in accordance with the County of San Diego RPO. While two of the tested sites are recommended as significant based on CEQA and San Diego County guidelines, none of these sites contains the range of artifacts or information potential that would elevate the sites to the status of RPO significance. None of the tested sites contained any evidence or artifacts of religious or ceremonial nature.

The cultural resources within the Otay Business Park Project were evaluated on the basis of data gathered during the current investigation. Of the 13 sites tested and evaluated during the current project, three are recommended as significant based on CEQA and San Diego County guidelines, nine are recommended as significant based on County guidelines only, and the remaining one was evaluated as not significant by either CEQA, San Diego County, or RPO guidelines. An additional four resources were previously tested and evaluated as not significant prior to this project, and six isolated artifacts were discovered during the survey that were not considered significant resources. The cultural resources are listed by significance category in Table 8.0–2.

TABLE 8.0–2
Significance Recommendations for Evaluated Sites

Significant (CEQA and RPO)	Significant (County)	Significant (CEQA and County)	Not Significant
None	SDI-17,962	SDI-11,799/H	SDI-8074
	SDI-17,964	SDI-17,963	SDI-8076
	SDI-17,965	SDI-8081	SDI-8079
	SDI-17,966/H		SDI-8080
	SDI-17,967		SDI-8082
	SDI-8075		
	SDI-8077		
	SDI-8078		
	SDI-11,798		

<u>Figure 8.0–1</u>
Project Development Map with Cultural Resources

(Deleted for Public Review; Bound Separately)

8.2.2 Discussion of Collective Site Significance

Site significance has been discussed throughout this report on the basis of individual site evaluations using San Diego County criteria, which requires consideration of site importance based on the association of multiple site districts. Therefore, the discussion of obvious intersite relationships of prehistoric sites in the Otay Business Park project merits discussion. In small measure, the absence of radiocarbon dates limits the confirmation of site linkage chronologically. Chronological studies are recommended for future work at this project that will assist to analyze the temporal spectrum of prehistoric use sites within the project area.

Utilizing data from the testing program, some conclusions may be drawn from a multiple site analysis. Geographically, several of the prehistoric sites in the project are associated with contiguous landforms that are characterized by metavolcanic exposures. The consistency of the land-use pattern at the sites is worthy of note. The fact that the natural abundance of lithic resources in the area joined in the geographical assimilation the Otay Mesa to the west and the rolling hills, steep canyons, water and food sources found on this southwestern extension of the San Ysidro Mountains provides sufficient cause that cultural activity was evident over a wide area, both within and adjacent to the project.

Judging from site characteristics, artifact density and quantity, and subsurface deposits, the matrix of a prehistoric resource exploitation pattern can be recognized. Although the sites within the project are not isolated and, in fact, are connected geographically, temporally, and culturally to related sites within a short distance of the project, together, these sites form a recognizable collection of habitation and processing sites that are associated with major Kumeyaay and Archaic La Jolla Complex encampments in Otay Valley and Salt Creek to the north.

In a hierarchical analysis of sites, the weight of importance is directly based on the range of human activities represented or inferred from the material culture left behind in the archaeological record. Using Binford's model (Binford 1980), it is expected that the sites with the highest number of activities represent the permanent or semi-permanent settlements where all members of a group participated in cultural activities. This is typified by Site SDI-8081, which possesses a moderately deep midden deposit containing lithic resources and a wide variety of marine shell. Conversely, special-use sites, such as a quarry or hunting blind, are used by only a limited selection of the group's population for activities that require a minimal tool kit and have a brief duration of use. Focusing on the Otay Business Park sites, use of a hierarchical approach to site typology is difficult because the remaining sites display a lack of variety of artifact types and features. However, although Site SDI-17,963 is interpreted as a special-use site (specifically lithic extraction, and tool production and maintenance), the subsurface deposit seems to indicate an extended period of use, which may overlap the transition from the Archaic La Jolla Complex to the Late Prehistoric Kumeyaay. This transitional period is a major research topic pertaining to regional prehistoric archaeology.

Historic sites within the Otay Mesa area are usually sporadic in nature and conform to the artificial division of land. These sites are typically homestead sites where farmers and ranchers acquired land through various land grants and acts, which were contingent upon successful development of the land either for agricultural, ranching, or timber use. The success of these rural enterprises was, in turn, contingent upon factors such as the environment, population pressures, regional development, and supply and demand. The historic site SDI-11,799/H is located where historic sources have placed a structure. The site has been found to be significant due to a wide array of artifacts from an intact, relatively undisturbed subsurface deposit. Due to the intact nature of the deposit and the wide variety of domestic and farming/ranching contexts, SDI-11,799/H may be able to address important historical research questions pertaining to population booms and recessions, environmental pressures, and historical event along the international border.

8.3 Assessment of Effects

In order to assess the effects of the proposed Otay Business Park Project on cultural resources, a set of assumptions was used for the impact analysis:

- The area of potential development will include all areas within the project boundaries, resulting in 100% impact.
- All impacts to cultural resources are assumed to be direct, particularly those resulting from grading. All direct impacts will result in the disturbance or removal of the resources.
- Cultural resources that border the proposed development and the off-site improvements will not be directly impacted; however, indirect impacts may be a concern for these sites.

The proposed project will impact 23 archaeological resources within the Otay Business Park and off-site improvements boundaries. Impacts to the resources mentioned below will be fully mitigated by the measures that are recommended.

1. Direct impacts from the development of the Otay Business Park:

    (A) Direct Impacts to Three Sites Recommended as Significant based on CEQA and County Guidelines: The following important sites would be directly affected by the grading and brushing of the project and the off-site improvements areas. One of the sites is characterized as a long term prehistoric lithic procurement and tool manufacturing and maintenance site. Another site is characterized as a habitation locale. The other is characterized as a late 19th century historic homestead. All of these sites contain subsurface deposits that represent significant research potential. Direct impacts to these sites would be significant. Potential impacts to these sites are considered significant.

SDI-8081

SDI-11,799/H

SDI-17,963

(B) Direct Impacts to Nine Sites Recommended as Significant based on County Guidelines: Within the limits of grading and brushing for the proposed project and the off-site improvements areas, nine resources will be impacted which have been tested and recommended as significant. However, these sites do not possess additional research potential, and therefore will have been mitigated by the recording of testing data and the curation of all collected artifacts.

SDI-17,962	SDI-17,964	SDI-17,965	SDI-17,966/H	SDI-17,967
	SDI-8075	SDI-8077	SDI-8078	SDI-11,798

(C) Direct Impacts to Eleven Non-Significant Resources: Within the limits of grading and brushing for the proposed project and the off-site improvements, twelve resources will be impacted that have been either currently or previously tested and recommended as not significant, or in the case of isolates are considered not significant by their unassociated nature. Impacts to these resources will not be significant.

SDI-8074	SDI-8076	SDI-8079	SDI-8080
SDI-8082	P-37-027656	P-37-027657	P-37-027658
P-37-027659	P-37-027660	P-37-027661	

Summary of Impact Significance

The area within the Otay Business Park Project and off-site improvements will directly impact 22 cultural resources completely and one resource partially, affecting a total of 23 resources (17 sites and six isolates). Three of these sites were evaluated as significant based on CEQA and San Diego County guidelines and are considered to have potential to yield additional information; impacts to these three sites are considered significant. These three significant sites are not RPO significant. Nine sites to be impacted are considered significant based on San

Diego County guidelines, but are not considered to have additional research potential. Impacts to the remaining five sites will not be significant, and impacts to the six isolates will not be significant. Impacts and significance recommendations are summarized in Table 8.0–3.

TABLE 8.0–3
Summary of Impacts and Significance Recommendations

Directly Impacted	Number of Sites
Number of Significant (CEQA/San Diego County) Resources Directly Impacted:	3
Number of Significant (San Diego County) Resources Directly Impacted:	9
Number of Non-Significant Resources Directly Impacted:	11
Total Number of Resources:	23

One additional site, SDI-12,888H, was located in close proximity to the off-site improvements boundary. The current program determined that this site is located entirely outside of the impact area and, as a result, will be excluded from all significance evaluations and impact discussions.

8.4 Cumulative Impact Analysis

A cumulative impact, in terms of cultural resources, refers to increasing total effect on cultural sites due to past, present, and future activities of public and private entities and natural processes. The key to assessing cumulative impacts to archaeological sites is to understand that these resources are not renewable nor can they be replaced. The importance and significance of cultural resources comes from their association with our heritage, as well as the research value and the information that they contain. Hence, the issue that must be explored in a cumulative impact analysis is the cumulative loss of information as well as the loss of recognized cultural landmarks and vestiges of our cultural history. The CEQA definition of a cumulative impact from the Office of Planning and Research, Section 15355 is:

> Cumulative impacts refer to two or more individual effects, which when considered together, are considerable or which compound or increase other environmental impacts. Furthermore:

(a) The individual effect may be changes resulting from a single project or a number of separate projects.

(b) The cumulative impact from several projects is the change in the environment, which results from the incremental impacts of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

A cumulative impact analysis considers the development of the proposed project, in conjunction with other modern development in the vicinity and the effects of natural events, on cultural resources. The potential cumulative effect of these projects is the loss of cultural resources, which would collectively contribute to the loss of San Diego prehistory. However, project specific mitigation can be implemented to reduce the effect of this development by ensuring scientific recovery, study, and curation of important cultural resources.

The following section discusses the cumulative impacts for the prehistoric cultural resources located within the Otay Business Park Project. The Management Plan for Otay Mesa Prehistoric Resources (Gallegos et al. 1998) was used as a guide for defining prehistoric site types, the resource study area, and site comparisons. In addition, information obtained through the record search obtained from the SCIC (updated October 2009; Appendix II) was also used for the cumulative impact assessment. The current status of archaeological sites outside of the project boundaries was not verified through visual inspection. Assumptions of site status were based on aerial maps showing developed lands and site record information.

Resource Study Area

The Otay Business Park Project is located in the southeastern portion of the Otay Mesa, southwest of the San Ysidro Mountains, in San Diego County. Otay Mesa comprises approximately 10,000 acres that is bordered by the coastal plain on the west, Otay River on the north, the Tijuana River on the south, and the San Ysidro Mountains on the east. In prehistoric times, the vegetation of Otay Mesa consisted of coastal sage scrub, chaparral, grasslands, and mima mounds with associated vernal pools (Gallegos et al. 1998:19). The Otay Mesa is unique in that it contains hundreds of archaeological sites, some of which date to the early and middle Holocene and the beginning of San Diego prehistory (Gallegos et al. 1998; Kyle et al. 1990 and 1998; Smith et al. 2004 and 2006).

A total of 365 prehistoric archaeological sites had been recorded in the Otay Mesa Management area as of 1998 (Gallegos et al.). Many of the archaeological sites on the mesa are marginal, sparse lithic scatters (N=225; 61.64%) and constitute part of the cultural manifestation known as the “Otay Smear,” which is characterized as an extensive, yet scant, surface lithic scatter consisting primarily of cores and debitage and occasionally a few tools (Gallegos et al. 1998). The natural abundance of cobble materials, associated with the Lindavista and Otay formation and well suited for making stone tools, accounts for the extensive nature of this lithic scatter. Habitation sites and temporary camps are scattered throughout the Otay Mesa and tend to be located near water sources and at the head of drainages. Major habitation sites contain knives, atlatl dart points, milling and cobble tools, cores, drills, hammerstones, scrapers, beads, pendants, bone and shell and have ranged in age between 9,500 years and 300 years before present (Gallegos et al. 1998; Smith et al. 2004 and 2006). Metavolcanic quarries are located in the San Ysidro Mountains, on the east side of the mesa, near outcrops of Santiago Peak Volcanic materials. The quantity and variety of sites on the Otay Mesa attests to availability of tool stone materials, plant and animal resources, and water that provided sustenance to prehistoric populations.

Radiocarbon information is available for only 22 of the 365 sites recorded in the Otay Mesa Management area and less than one percent of these resources have been preserved in open space (Gallegos et al. 1998). Only five habitation sites (SDI-222, SDI-4281, SDI-8654, SDI-11,424, SDI-10,198) and two quarry sites (SDI-10,666 and SDI-10,667) are in open space easements or undeveloped and available for long term preservation since they are in state or county lands (Gallegos et al. 1998). The preserved sites, however, do not represent the temporal range and diversity of prehistoric cultural resources. Consequently, it is recommended that a minimum of 10 percent of all sites within river valleys, canyons, and in the Santiago Peak Volcanic formation be identified for preservation (Gallegos et al. 1998). Many of the other sites have been destroyed by development (e.g., roads, residences, industrial), or their current status is unknown. Nearly all have been impacted by agriculture activities, including plowing, disking, and grazing.

The County of San Diego requested the use of the East Otay Mesa Specific Plan (EOMSP) area for the Otay Business Park Project cumulative impact area. The EOMSP area encompasses approximately 3,300 acres comprised of multiple drainages and open mesa land that approaches the southwestern foothills of the San Ysidro Mountains. The San Ysidro Mountains are a natural barrier to large-scale cultural expansion (past and present), which was taken into consideration in the establishment of the cumulative impact study.

Cumulative Projects

According to the updated (2009) SCIC records search (National Archaeological Database, NADB) results, 106 submitted reports describe past archaeological investigations for proposed projects within the EOMSP/cumulative impact area for the proposed Otay Business Park Project (Table 8.0–4; Appendix II). Failed project proposals and parcels documented by multiple archaeological investigations mean that the number of returned NADB results exceeds the number of actualized EOMSP projects. The NADB results document reports for projects (failed, actualized, and proposed) that concerned the international border, security, and commercial endeavors, transmission line projects, industrial quarries, public service projects that involve sewer, water, and correctional facility construction and improvements, off-road vehicle parks, resource management, transportation, and unspecified development. Collectively, these projects reflect the east and southward expansion of housing and industrial development in the Otay area and need for improved and increased infrastructure and recreational areas, in addition to heightened international border security. In addition to development, much of this area has been disturbed by agriculture since the early 1900s. The archaeological reports that the SCIC records search results returned address cultural resource issues on approximately 33,950 acres in the Otay Mesa area over the past 30 years. The inflated number is due to survey duplication and surveys with boundaries that extend beyond the EOMSP area.

TABLE 8.0–4
Summary of EOMSP Area Cumulative Projects

General Project Type	Description	Estimated Number of Projects	Estimated Number of Reports	Estimated Acreage and/or Linear Miles
Border/Security	• Border Crossing (Carrico 1974); • Border Lights (McDonald et al. 1998, SAIC 1996, Mooney 1994, Dibble 1991, Cook and Pallette 1994); • Lighting, Fencing, and Roadways at Border (US Army Corps of Engineers 1997); • East Mesa Detention (Gallegos et al. 1998, Westec 1987, 1988); • Otay Mesa Correctional Facility/ State Prison (Thesken and Carrico 1982, Westec 1982); • Six Border Road Repair (Gross et al. 1996); • Vehicle Barrier & Drainage Works (Schiltz 1989); • RTX Rapid Transfer Xpress (Robbins-Wade and Giletti 2007); • Border Patrol Station (Guerrero and Gallegos 2007); • Corrections Corporation of American (Noah et al. 2006); • Space Surveillance Field Station (Underwood 2000)	11	18	888+ acres, 25+ miles
Commercial	• International Raceway (Graves 1985, TMI 1990); • San Diego Motor Racing Park (Smith and Moriarty 1985); • Bradley Auto Storage (Xinos Enterprises 1988); • Airway Business Park (Hector 1987); • Airway Truck Parking (Buysse and Smith 2000); • Sunroad Otay Truck Park (Wade 1999); • Auto Storage (BFSA 2000); • Otay Crossings Commerce Park (Robbins-Wade 2008)	8	9	1,522 acres

General Project Type	Description	Estimated Number of Projects	Estimated Number of Reports	Estimated Acreage and/or Linear Miles
Development (unspecified)	• Negative Survey (City of San Diego 1994); • Wetmore Property (Gallegos and Associates 2000); • Westmore (Cupples and Eidsness 1978); • Lonestar Parcel (Gallegos & Associates 2003, 2004); • Parcel 646-130-42 (Gallegos & Associates 1992); • Parcel B (Gallegos & Associates 2004); • Alta Lot Line (Gallegos & Associates 2004); • Valle de Oro Property (Nighabhlain 2000); • Monofil (Saunders 1993); • International Center (Recon 1983, Rick Engineering 1983); • TPM 12400 (Berryman 1976); • Zinser-Furby Parcel (Gallegos and Kyle 1992); • Robert Eggar Jr. Parcel (Gallegos and Kyle 1992); • Struthers Trust #3 Parcel (Gallegos and Kyle 1992); • Parcel 646-264-31 and 646-240-28 (Gallegos and Kyle 1992); • Loma-Sorrento Investors (Gallegos 1992); • Otay Ranch (Berryman 1987; Carrico 1993, Ogden 1992); • Otay Valley Parcel (Smith 1996); • Piper Homestead (Hector and Van Wormer 1987); • Piper Otay Park (Robbins-Wade 2007); • Historic Property (Gallegos et al. 1997); • Rancho Vista del Mar (Guerrero and Gallegos 2003); • Johnson Canyon (Gallegos and Guerrero 2003); • TPM 18724 (Berryman 1986); • California Crossing (Robbins-Wade 2008);	25	29	23,702 + acres
Energy	• Miguel-Tijuana 230 KV International Connection (Cultural Systems Research, Inc. 1983; Westec Services 1979, 1991); • Generating Project (Gallegos & Associates 2000, 2001, 2002)	2	6	2+ Miles
Industrial	• Otay Hills Quarry (BFSA 2005); • Otay Mesa Sand and Gravel (Tetra Tech 2000); • 27 Drill Sites (Gallegos & Associates 1988)	3	3	218+ acres
Public Services	• Sludge Processing and Pipeline (Robbins-Wade and Gross 1990); • SDG&E Vecinos Gas Pipeline (Gross 1992; Robbins-Wade 1992); • SDG&E Pipeline Extension (Robbins-Wade 1998, 1999); • Otay Water District Central (Kyle and Gallegos 1994); • Otay Mesa Road Pipeline (Latas and Roth 1991); • Prison Sewer Pipeline (Hargrove 1985, Kidder 1984); • Otay Valley Water Reclamation Plant (Mooney 1992); • SD County Water Authority Pipeline (Mooney 1991); • Gravity Sewer Interceptor (Pierson 2003); • Stormwater System Maintenance (Robbins-Wade 2008)	10	13	190+ acres, 1,800+ miles
Recreation	• Otay Mesa OHV Park EIR (Westec/ EDAW 1986)	1	1	2150 acres

General Project Type	Description	Estimated Number of Projects	Estimated Number of Reports	Estimated Acreage and/or Linear Miles
Resource Management	• East Otay Mesa Specific Plan (Ogden Environmental 1993); • Otay Mesa Development (Case 2007); • CA-SDI-10,454 (Dominici 1992); • CA-SDI-5352 and CA-SDI-12,730 (Gallegos and Kyle 1992); • Kuebler Ranch (Gallegos and Flennikan 2000, Gallegos and Guerrero 2005); • CA-SDI-16788 (Guerrero et al. 2004); • CA-SDI-12884 and CA-SDI-12885 (Guerrero et al. 2003); • Six Sites on Otay Mesa (McDonald and Eighmey 1997); • Two Prehistoric Sites (Cooley 1999)	9	10	5450+ acres
Transportation	• Future State Route 11 (Kyle Consulting 2001; Rosen 2008); • SR 125 (McCorkle-Apple and Shaver 2006, Pierson and Henry 2007, Rosen 1990, 2006, Serr and Saunders 1994, Caltrans 1990, 1995, 1998); • Truck Inspection (Rosen 1993); • SR 905 (Gallegos 1999); • Otay Mesa Truck Route (Wade 1994); • Otay Mesa Road Widening (Kyle et al. 1996); • Pilot Transportation Center (Kyle 2005, Robbins-Wade 2007); • Enrico Fermi Drive Road Improvement (Fink 1999)	8	17	52.5+ acres, 11.2 miles

Archaeological Sites Within and Surrounding the Project Area

A combined total of 137 cultural resources have been recorded within the Otay Business Park Project and its surrounding cumulative impact area. One hundred and four (86 prehistoric, nine historic, six dual, and three unknown) of these resources are characterized as archaeological sites and the remaining 33 are artifact isolates (32 prehistoric and one historic). Scant, surface lithic scatters, temporary camps/artifact scatters, and habitations are the types of prehistoric sites identified in, or immediate near, the project area. The sparse, surface scatters can be characterized as part of the "Otay Smear" and are generally located atop the mesa. The other temporary camps/artifact scatters and habitation locales are located along the canyon and drainages that feed into the Otay or Tijuana Rivers.

Of the 104 archaeological sites recorded within the EOMSP/cumulative impact area, 19 sites are believed to have been destroyed, or partially destroyed, by grading and other development activities based upon the SCIC records search aerial (dated to 2007; Appendix II) and site records. Only one cultural resource, Site SDI-10,081, was destroyed before a formal recordation and evaluation could be performed. Impacts to the majority (N=15) of the cultural resources were mitigated through testing or data recovery. Three surficial lithic scatters (SDI-10,072, SDI-14,726, and SDI-14,727) were not relocated for more formal evaluation. The destroyed/partially destroyed sites are listed in Table 8.0–5.

TABLE 8.0–5
Summary of Destroyed, or Partially Destroyed, Sites in EOMSP/ Cumulative Impact Area

Site	Type	Significance Determination	Mitigation
SDI-7215 (Locus A)	Surficial Lithic Scatter	Not Significant (Noah and Gallegos 2006)	Tested, Monitoring (Guerrero and Gallegos 2007)
SDI-8076/ SDI-8079	Habitation	Not Significant (McDonald et al. 1998)	Tested, no additional archaeological studies recommended (McDonald et al. 1998)
SDI-8652	Surficial Lithic Scatter	Not Significant (McDonald 1998)	Tested, no additional archaeological studies recommended (McDonald 1998)
SDI-8653	Surficial Lithic Scatter	Not Significant (McDonald 1998)	Tested, no additional archaeological studies recommended (McDonald 1998)
SDI-8654	Habitation Area/ Lithic Scatter	Lithic Scatter Not Significant, Habitation Area Significant (Kyle and Gallegos 1994)	Data Recovery/Avoidance recommended for non-tested Significant portions of site (Kyle and Gallegos 1994)
SDI-10,067	Surficial Lithic Scatter	Not Significant (Kyle and Gallegos 1992)	Tested, no additional archaeological studies recommended (Kyle and Gallegos 1992)
SDI-10,072	Surficial Lithic Scatter (part of SDI-12,337)	Not Relocated (Gross 1993)	Not Possible, Destroyed (Gross 1993)
SDI-10,081	No Description Available, Destroyed	Not Possible, Destroyed (Gross 1993)	Not Possible, Destroyed
SDI-10,297	Temporary Camp/Historic Cistern	Significant Temporary Camp/ Not Significant Cistern (Clifford and Smith 2005)	Tested, Monitoring recommend (Clifford and Smith 2005, Guerrero and Gallegos 2007)
SDI-10,298	Temporary Lithic Reduction	Not Significant (Gallegos 2000)	Tested, no additional archaeological studies recommended (Gallegos 2000)

Site	Type	Significance Determination	Mitigation
SDI-10,627	Surficial Lithic Scatter	Not Significant (Hector and Wade 1986)	Tested, no additional archaeological studies recommended (Hector and Wade 1986)
SDI-11,821H	Piper Ranch Complex/ Disturbed Prehistoric Camp	Not Significant (Kyle et al. 1996)	Tested, no additional archaeological studies recommended (Kyle et al. 1996)
SDI-12,256	Habitation	Not Significant (Robbins-Wade 1999, Rosenberg and Smith 2007)	Tested, no additional archaeological studies recommended (Robbins-Wade 1999, Rosenberg and Smith 2007)
SDI-12,337	Dispersed Lithic Scatter	Not Significant (Rosen 1990)	Tested, Monitoring (Pierson 2009)
SDI-12,878	Surficial Lithic Scatter	Not Significant (Cooley 1999)	Tested, no additional archaeological studies recommended (Cooley 1999)
SDI-12,886	Surficial Lithic Scatter	Not Significant (Buysse and Smith 2000)	Tested, no additional archaeological studies recommended (Buysse and Smith 2000)
SDI-12,887	Surficial Lithic Scatter	Not Significant (Buysse and Smith 2000)	Tested, no additional archaeological studies recommended (Buysse and Smith 2000)
SDI-14,726	Surficial Lithic Scatter	Not Relocated (Buysse 1998)	No additional archaeological studies recommended (Buysse et al. 1998)
SDI-14,727	Surficial Lithic Scatter	Not Relocated (Buysse 1998)	No additional archaeological studies recommended (Buysse et al. 1998)

Archeological Sites within the EOMSP/Cumulative Impact Area

At least 87 archaeological sites are located within the EOMSP/cumulative impact area surrounding, but not including, the current project property. Sixteen of these sites (Table 8.0–6) have been added to the cultural resource inventory for East Otay Mesa since the production of the “Supplement to the East Otay Mesa Cultural Resources Technical Report Update” (Russell et al. 2002). In addition to the site types summarized in Table 8.0–7 (68 prehistoric, seven historic, five dual component, and three unknown), two bedrock milling sites, one prehistoric shell scatter, and one quarry site have been recorded .

TABLE 8.0–6

Archaeological Sites Added to the East Otay Mesa Specific Plan Area (EOMSP)*

Trinomial	Other Designation(s)	Site Type
CA-SDI-10,072	Part of CA-SDI-12,337	Unknown
CA-SDI-11,363	-	Lithic Scatter
CA-SDI-11,385H	-	Munitions Debris
CA-SDI-11,821H	-	Disturbed Temporary Camp/ Piper Ranch Complex
CA-SDI-12,274H	-	Historic Artifact Scatter
CA-SDI-14,726	-	Lithic Scatter
CA-SDI-14,727	-	Lithic Scatter
CA-SDI-15,041	-	Lithic Scatter
CA-SDI-15,874	-	Lithic Scatter
CA-SDI-15,875	-	Lithic Scatter
CA-SDI-16,788	-	Lithic Scatter
CA-SDI-17,104	Part of CA-SDI-12,337	Lithic Scatter
CA-SDI-17,105	Part of CA-SDI-12,337	Lithic Scatter
CA-SDI-17,431	-	Lithic Scatter
CA-SDI-17,433/H	-	Historic Rock Enclosure
CA-SDI-18,400	-	Lithic Scatter

** For a detailed list of the remaining sites within the East Otay Mesa Specific Plan Area see "Supplement to the East Otay Mesa Cultural Resources Technical Report Update" (Russell et al. 2002)*

TABLE 8.0–7

Summary of Sites within the EOMSP/Cumulative Impact Area

Historic Site Type	Disturbances	Total	Significance	Status
Structures	Roads, jeep trails, plowing, erosion	6	4 Undetermined, 2 Not Significant	1 Destroyed, 1 Protected, 4 Require Mitigation
Artifact Scatters	Roads, jeep trails, plowing, erosion	5	5 Undetermined	5 Require Mitigation
Rock Enclosure	Roads, jeep trails, plowing, erosion, grading	1	1 Not Significant	1 Mitigated

Prehistoric Site Type*	Disturbances	Total	Significance	Status
Habitation	Roads, jeep trails, plowing, erosion, pot hunted, and modern trash	7	4 Significant, 1 Not Significant, 2 Undetermined	5 Mitigated, 2 Require Mitigation
Temporary Camp; Artifact Scatter	Roads, jeep trails, plowing, erosion, pot hunted, and modern trash	10	2 Significant, 5 Not Significant, 3 Undetermined	5 Mitigated, 5 Require Mitigation
Non-Site (surficial lithic scatters)	Roads, jeep trails, plowing, erosion, and grazing	56	24 Not Significant, 32 Undetermined	24 Mitigated 32 Require Mitigation
Unknown	Roads, jeep trails, plowing, erosion, and grazing	3	2 Unknown, 1 Undetermined	2 Destroyed 1 Undetermined
*Site type definitions after Gallegos et al. 1998 (Management Plan for Otay Mesa Prehistoric Resources)				

Most sites (N=56; 64.37%) within the EOMSP/cumulative impact area consist of sparse, surface lithic scatters that are represented mostly by lithic production waste, and few if any tools. Gallegos et al. (1998) refers to these sparse lithic scatters as “non-sites,” since the surface artifact density ratio (number of artifacts divided by site size) is less than 0.03 and they lack a subsurface deposit. Surface lithic scatters, or non-sites, are recorded to the west, northwest, north, northeast, and east of the project area, particularly along the margins of the seasonal drainages. These sparse lithic scatters represent small, task-specific locations that are part of a regional pattern of resource acquisition associated with habitation sites elsewhere.

Sparse, surface lithic scatters, or “non-sites,” are the most common type of cultural resource identified on the mesa and in the immediate project vicinity. Sparse, surface lithic scatters represent prehistoric actions of knappers testing cobbles to determine the suitability of the interior lithic material, and possibly the production and use of a tool on the spot for a one-time event. The research potential of these “non-sites” is almost non-existent because often the boundaries are difficult to define, they cannot be compared with other sites or loci, and they cannot be said to represent a statistical sample of either lithic production waste or tools (Gallegos et al. 1998:51). Furthermore, archaeological tests of sparse lithic scatters have demonstrated that these site types lack research potential and Native American concerns and hence, are not eligible for inclusion in the California or National Register of Historic Places. Cumulative disturbances to these sparse lithic scatters, or “non-sites,” include plowing, roads, jeep trails, erosion, reservoir construction, fence construction, and grazing (Table 8.0–7). Several lithic scatters or “non-sites” have been destroyed (N=14) from development projects conducted within the EOMSP/cumulative impact area of the proposed project (Table 8.0–6); impacts to 11 of these lithic scatters were mitigated through testing before destruction, and three were not relocated. Most (N=32) of the EOMSP/cumulative impact area surface lithic scatters require more formal evaluation (Table 8.0–7).

Temporary Camps/Artifact Scatters

The second most common site type within the EOMSP/cumulative impact area is the temporary camps/artifact scatter, which is defined as having three artifacts every 100 square meters, some bone and shell, and the lack of a significant subsurface deposit (Gallegos et al. 1998). Seventy-one (31 temporary camps and 40 artifact scatters) have been recorded in the Otay Mesa Management Plan area (Gallegos et al. 1998). Ten temporary camps/artifact scatters lie within the EOMSP/cumulative impact area of the proposed project (Table 8.0–7). Two of these site types were at least partially destroyed after impacts were mitigated (SDI-10,297 and SDI-11,821H; Table 8.0–5). Temporary camp(s)/artifact scatter(s) suffer similar modern and historic disturbances as the sparse lithic scatter(s); although modern trash dumping and pot hunting have also affected this site type (Table 8.0–7).

Habitation

The third site type, habitation sites, is the least common site type within the EOMSP/cumulative impact area; however, the habitation site is the most important as it typically contains information that can be used to address a range of research issues, including chronology, subsistence, settlement, trade, and technology. Habitation sites are the location where people conducted subsistence, utilitarian, and ceremonial activities for an extended period. Consequently, the cultural material from this type of sites is varied and abundant, typically containing multiple tool types and lithic materials, rare materials and artifacts, animal bone, and marine shell. Seven habitation sites (Table 8.0–7) have been found in the EOMSP/cumulative impact area of the proposed project. Impacts to two of these sites, SDI-8654 and SDI-12,256, have been at least partially mitigated through testing or data recovery and destroyed. Three of the sites (SDI-10,297, SDI-12,707, and SDI-12,710) have been mitigated or mitigation measures have been recommended. The remaining two sites (SDI-10,299 and SDI-12,710) require more formal evaluation. Site SDI-10,299 has been subjected to partial testing (Robbins-Wade 2006) and a grading monitoring program (Guerrero and Gallegos 2007) due to nearby developments. SDI-12,704 is reported to contain numerous metavolcanic tools, manos, and metates (Huey 1991 site form); however, no testing has been undertaken to date.

Historic

Seven historic sites (SDI-12,888H, SDI-11,385, SDI-12,274, SDI-11,796, SDI-11,802, SDI-17,433, SDI-15,040) and five sites with historic components (SDI-12,713, SDI-10,297, SDI-11,821, SDI-11,797, SDI-12,701) are present within the EOMSP/cumulative impact area of the Otay Business Park Project (Table 8.0–7). The historic components of SDI-10,297 and SDI-11,821 were both tested and evaluated as not significant and at least partially destroyed (Table

8.0–5). Site SDI-17,433/H, a rock enclosure, was evaluated as not significant and no additional archaeological studies were recommended (Clifford and Smith 2005). The remaining historic resources all require more formal evaluation in order to determine appropriate mitigation measures.

Archaeological Sites within the Otay Business Park Project Area

Seventeen archaeological sites (14 prehistoric, two historic, and one dual component) are located within the Otay Business Park Project (Table 8.0–8). Four of these sites have been previously tested and determined not significant (SDI-8076/SDI-8079, SDI-8080, and SDI-8082). One site (SDI-8074) demonstrated no surface expression, was tested as a result of the current Otay Business Park Project investigation, and was determined to be not significant. Nine of these sites (SDI-8075, SDI-8077, SDI-8078, SDI-11,798, SDI-17,962, SDI-17,964, SDI-17,965, SDI-17,966, and SDI-17,967) have been tested as a result of Otay Business Park Project archaeological investigations and determined significant; however, their lack of future research potential indicates that testing has mitigated the developmental impacts to these sites. The three remaining sites (SDI-8081, SDI-11,799/H, and SDI-17,963) have also been tested and determined significant as a result of the Otay Business Park Project's archaeological investigation; however, further mitigation is required due to the resources' ability to contribute additional information regarding past cultural lifeways.

TABLE 8.0–8
Summary of Otay Business Park Sites

Prehistoric Site Type*	Total	Significance	Status
Habitation	2	2 Not Significant (Mitigated)	1 Destroyed 1 Partially Intact
Temporary Camp; Artifact Scatter	3	2 Significant 1 Significant (Mitigated)	3 Partially Intact
Non-Site (surficial lithic scatters)	12	5 Not Significant (Mitigated) 7 Significant (Mitigated)	2 Destroyed 10 Partially Intact
*Site type definitions after Gallegos et al. 1998 (Management Plan for Otay Mesa Prehistoric Resources)			
Historic Site Type	Total	Significance	Status
Subsurface Trash Deposit	1	1 Significant	Partially Intact/ Intact
Surface Trash Scatter	1	1 Significant (Mitigated)	Partially Intact

Habitation

The Otay Business Park habitation sites consist of SDI-8076 and SDI-8079, which have been previously tested and determined not significant (Russell et al. 2002). The locations of SDI-8076 and SDI-8079 will be developed, however the impacts will not have a significant affects. Sites SDI-8076 and SDI-8079 are not listed as one of the 14 habitation sites identified by Gallegos et al. (1998) on the Otay Mesa and represent disturbed habitation locales within the farthest southeast portion of the mesa, close to the San Ysidro Mountains. Of the 14 habitation sites on Otay Mesa, identified in the Gallegos et al. (1998:vii, 73), only five (SDI-222, SDI-4281, SDI-8654 Loci B and D, SDI-11,424, and SDI-10,198) are undeveloped and available for long-term preservation, as the remaining sites have been destroyed or their status is unknown. Roads, plowing, erosion, and fence construction have impacted the habitation sites within the current project area (SDI-8076 and SDI-8079) and those in a one-mile vicinity (SDI-12,704; Tables 2.3-2 and 2.3-4). Clearly, these previous impacts and the foreseeable direct impacts of the Otay Business Park Project will result in cumulative impact to prehistoric resources given the continued loss of habitation sites on the Otay Mesa. However, mitigation can be implemented to reduce the effect of the proposed development by ensuring the scientific recovery and study of the habitation sites (SDI-8076 and SDI-8079) to be directly impacted by the proposed project. This will ensure that important information about prehistory is not lost. Therefore, since the actions of the proposed project have been mitigated through previous testing and reporting (Russell et al. 2002) and will be mitigated through the currently proposed monitoring, curation, and reporting, the Otay Business Park Project will not have a significant cumulative impact to habitation sites.

Sparse, Surface Lithic Scatters or “Non-Sites”

Twelve sites identified within the Otay Business Park Project can be characterized as “non-sites,” all of which are not significant (Table 2.3–4). All of these sparse lithic scatters, or “non-sites,” will be directly impacted by the proposed development. These marginal, non-significant sites are defined as “non-sites” (after Gallegos et al. 1998) since they lack a substantial subsurface deposit and surface artifact density ratios are less than three artifacts present in a 100 square meter area. Nonetheless, cumulative impacts to this site type are not considered significant given that this site type lacks research potential or Native American concerns.

Temporary Camps/Artifact Scatters

Three prehistoric resources within the Otay Business Park property are considered Temporary Camps/Artifact Scatters (after Gallegos et al. 1998). None of these sites were identified in the Otay Mesa Prehistoric Resources Management Plan (Gallegos et al. 1998). The two Temporary Camps/Artifact Scatters that have been identified as significant are located within the southeast quarter of the current project (SDI-17,963) and partially within the off-site improvement area (SDI-8081). Recent testing of SDI-17,963 recovered a total of 522 artifacts, consisting of 498 specimens of lithic production waste and precision, percussion, expediant and groundstone tools, to a depth of approximately 40 centimeters. Similarly, testing of the portions of SDI-8081 within the off-site improvements portion of the project area recovered 22 artifacts and 1,873.2 grams of marine shell (this report). The sites remain partially intact with continued research potential. Development of the Otay Business Park will pose significant direct impacts to important these cultural resources, Sites SDI-17,963 and SDI-8081, and result in significant adverse effects that will require additional mitigation. The remaining Temporary Camp/Artifact Scatter, Site SDI-17,965, was tested and determined significant; however, it was recognized that the resource no longer retained future research potential and therefore no additional mitigation is required.

Sites SDI-17,963 and SDI-8081 are not discussed by Gallegos et al. (1998) and represent partially impacted temporary camps within the farthest southeast portion of the mesa, close to the San Ysidro Mountains. Of the 11 temporary camps/artifact scatters tested on Otay Mesa, identified by Gallegos et al. (1998:vii, 73), at least nine have been destroyed. Within the broader EOMSP cumulative impact area, only 10 cultural resources of this type are recognized, two of which are at least partially destroyed. Clearly, these previous impacts and the foreseeable direct impacts of the Otay Business Park Project will result in cumulative impacts to prehistoric resources given the continued loss of temporary camps/artifact scatters on the Otay Mesa. However, mitigation can be implemented to reduce the affect of the proposed development by ensuring the scientific recovery and study of the temporary camps/artifact scatters (Sites SDI-17,963 and SDI-8081) to be directly impacted by the proposed project.

Historic

SDI-11,799/H is a dual component site for which only the historic component has been evaluated as significant with the potential to yield additional information. Testing of the historic component of SDI-11,799/H revealed an intact, subsurface deposit extending to 150 centimeters below the surface and dates to the late nineteenth century exists at the site.

Summary

The current status of most of the 137 cultural resources (104 archaeological sites, 33 archaeological isolates) in the EOMSP/cumulative impact area and the Otay Business Park Project has been discussed based upon current aerial photography and site record information (Appendix II). The majority of the sites have been impacted to a varying extent by roads and agricultural activity. Nineteen archaeological sites, including three prehistoric habitation sites, two prehistoric temporary camps (both with historic components), 14 prehistoric surface lithic scatters, and one unidentified resource have been destroyed or have likely been destroyed.

Given the loss or partial destruction of prehistoric resources, especially habitation sites, in the general vicinity of the project area and on the Otay Mesa from years of historic use or modern land development past projects, in combination with the previous impacts of roads, plowing, and erosion on prehistoric resources, the proposed Otay Business Park development is considered to have a cumulative impact on resources since it represents the continued destruction of non-renewable cultural resources. The development of the proposed Otay Business Park Project will at least partially impact two prehistoric temporary camps and one historic deposit (SDI-8081, SDI-11,799/H, and SDI-17,963), resulting in a significant cumulative impact to both prehistoric and historic cultural resources given that these resources contribute to the diversity and temporal range of sites on the Otay Mesa. Furthermore, these three sites are positioned on the southeastern edge of the mesa where it transitions into the San Ysidro Mountains and as such, are ideally suited for answering important questions regarding subsistence and settlement, chronology, technology, and trade.

Mitigation can be implemented to reduce the cumulative impact of the proposed development by ensuring the scientific recovery, study, documentation, and curation of these significant sites that retain further research potential (SDI-8081, SDI-11,799/H, and SDI-17,963). Important information about past lifeways will not be lost through well-planned and executed mitigation that documents and gathers all data from these non-replaceable and non-renewable resources. Consequently, since the actions of the proposed project can be mitigated through data recovery, curation, and reporting, the cumulative impact of the proposed project will be reduced to a level below significant.

9.0 MITIGATION MEASURES

The proposed development of Otay Business Park will impact 23 cultural resources. As noted in the impact analysis section, it is assumed that sites within the project boundaries or off-site improvements areas will be subjected to development impacts as a result of project approval. For the purpose of determining appropriate impact mitigation measures, these impacts to cultural resources will be considered on a project-wide basis. Any phasing of the project does not affect the net result of the eventual direct and indirect impacts to these cultural resources. Where significant archaeological sites with no additional research potential are impacted, measures to reduce impact levels to below significant will include the recording of site data during testing and the submittal of collected artifacts for curation. Where significant archaeological sites with additional research potential are impacted, measures will be required to mitigate the potential impacts to a level below significant. No additional mitigation measures will be required for resources that have been determined to be not significant. In general, the mitigation of impacts to important archaeological sites may be achieved through avoidance (preservation) or data recovery. Because cultural resources are finite, avoidance and preservation are the preferred mitigation measures. Avoidance would require that cultural resources be set aside and preserved in open space easements.

Where avoidance is not feasible, mitigation of potential impacts may be achieved through data recovery. For the three sites found to be significant resources, the determination of significance is rooted in the information potential represented by subsurface artifact and ecofact deposits. Therefore, the research potential of sites may be realized through data extraction by excavation, and the analysis of artifacts and provenience information.

The applicant has determined that preservation is not feasible for the Otay Business Park, and has opted to request the County approve a data recovery program for the mitigation of impacts. The necessary treatment of cultural resources within Otay Business Park is provided in Section 10.0, which lists the mitigation measures for significant cultural resources. The locations of the three significant cultural resources within the project area have been plotted in Figure 9.0–1.

9.1 Recommendations

In accordance with Section 15064.5 of CEQA and the guidelines of San Diego County, the sites evaluated as important in regards to research potential and which will be adversely impacted will require mitigation measures in the form of avoidance (preservation) and/or data recovery programs, to reduce the significance of developmental impact. Preservation is the preferred method to reduce adverse impacts to significant cultural resources. In order to reduce impacts to a level below significant, those areas of the project that represent direct impacts could be redesigned to avoid significant sites, or data recovery programs will be necessary at those sites that are important and will be impacted, but cannot be preserved. Where preservation is not a feasible alternative from the applicant's position and data recovery is selected, the data recovery program must include adequate subsurface samples of significant cultural deposits to meet County requirements. The general mitigation proposal is provided in Section 9.2, while specific project mitigation procedures are provided in Section 9.3, and site-specific mitigation measures are given in Section 10.0.

<u>Figure 9.0–1</u>
Significant Cultural Resource Location Map

(Deleted for Public Review; Bound Separately)

9.2 Proposed Mitigation Measures

The applicant has determined that preservation is not feasible, and that mitigation will be achieved through the implementation of a data recovery program. Proposed mitigation measures for the Otay Business Park Project are provided below.

Mitigation Measure 1) The mitigation of adverse impacts to the three significant sites (SDI-17,963 and SDI-11,799/H and the affected portion of SDI-8081) will be achieved through the implementation of a data recovery plan. Sites for which this type of mitigation program would be appropriate are those deemed significant for their research potential, but do not meet the significance level of an RPO significant site. All sites identified as culturally significant and not preserved can be included in the excavation data recovery program. The data recovery programs will include vertical and horizontal recordation of the sites and the curation of all collected materials.

Mitigation Measure 2) Because of the large number of cultural resources within the project and the fact that past uses or dense ground cover may have masked additional sites, all brushing and grading that affect areas in the upper five-feet of soil within the Otay Business Park Project area and off-site improvements shall be monitored by an archaeologist. The monitoring of surface brushing and grading shall be conducted by one or more archaeologists, as dictated by the size of the grading operation. All utility excavations, road grading, or brush removal must be coordinated with the archaeological monitor. Any known resources that are graded must be intensively monitored during grading to ensure that any important features, isolates, or deposits are either recorded and collected, or excavated. Should any resources be encountered during the monitoring of brushing and grading and not previously recorded, the action will be temporarily halted or redirected to another area while the nature of the discovery is evaluated. Any resources that may be encountered will require testing to determine their significance. If the testing demonstrates that a resource is significant, then a data recovery program will be necessary.

Mitigation Measure 3) Nine sites (SDI-8075, SDI-8077, SDI-8078, SDI-11,798, SDI-17,962, SDI-17,964, SDI-17,965, SDI-17,966/H, and SDI-17,967) have been determined to be significant but with no additional research potential. To reduce impacts to these resources to a level below significant, mitigation in the form of the recordation of information and curation of artifacts is recommended to exhaust all information associated with these sites. The recordation of information includes the data presented within the results of this report and on the appropriate DPR 523 cultural resource forms submitted to the SCIC. The curation of artifacts includes the legal transfer of all artifacts associated with the project to the San Diego Archaeology Center (SDAC) or other County approved facility for permanent curatorial storage.

Mitigation Measure 4) All archaeological mitigation work shall include the participation of a Kumeyaay Native American monitor. The Kumeyaay Native American monitor will coordinate with the project archaeologist and discuss any issues related to the Native American concerns about resources included in the mitigation program.

9.3 Project-Specific Mitigation Measures

The general categories of measures to mitigate potential impacts to cultural resources within the Otay Business Park Project are provided below:

(A) **Mitigation of Impacts to Three Sites Recommended as Significant Based on CEQA and San Diego County Guidelines:** Within the project, two sites and a portion of a third have been tested and recommended as significant based on criteria set forth in CEQA and San Diego County guidelines. Mitigation measures recommended for the three significant sites are discussed in Section 10.

SITE	RECOMMENDED MITIGATION
SDI-17,963	Data Recovery
SDI-11,799/H	Data Recovery
SDI-8081	Data Recovery

(B) **Mitigation of Impacts to Non-Significant Resources:** The following eleven resources have been evaluated by both CEQA criteria, County of San Diego Significance Guidelines and County of San Diego RPO criteria. All of these resources were evaluated as not significant, and no resource-specific mitigation measures are recommended.

SDI-8074	SDI-8076	SDI-8079	SDI-8080	SDI-8082
P-37-027656	P-37-027657	P-37-027658	P-37-027659	P-37-027660
P-37-027661				

(C) **Mitigation of Impacts to Limited-Significance Resources:** The following nine resources have been tested and evaluated by both CEQA and County of San Diego RPO criteria. All of these resources were evaluated as having limited significance. To reduce impacts to these resources to a level below significant requires mitigation in the form of the recordation of information and curation of artifacts to exhaust all information associated with these sites.

SDI-8075	SDI-8077	SDI-8078	SDI-11,798	SDI-17,962
SDI-17,964	SDI-17,965	SDI-17,966/H	SDI-17,967	

10.0 MITIGATION PLAN FOR THE OTAY BUSINESS PARK

The proposed development of the Otay Business Park will impact three archaeological sites evaluated as significant cultural resources based on CEQA guidelines. In order to comply with the regulations of CEQA and County of San Diego guidelines for the treatment of cultural resources, the following mitigation plan was developed. The goal of this plan is the successful mitigation of impacts and the preservation of valuable, non-renewable cultural resources.

A total of 23 cultural resources were identified within the boundaries of the Otay Business Park Project and off-site improvements areas. Six of these resources were isolated artifacts that were not considered significant and will require no further mitigation measures. The remaining 17 resources were either prehistoric, historic, or multi-component sites. Four of these 17 sites were previously evaluated and determined to be not significant, and will also require no further mitigation measures. The remaining 13 sites were subjected to a significance evaluation by BFSA as part of the current study. One additional site (SDI-12,888H) was previously recorded in a location very near the proposed off-site improvements. The current study determined that this site falls completely outside the impact area associated with the Otay Business Park, and was therefore not subjected to significance evaluation and is not included in the discussion of mitigation measures proposed for this project.

The technical report for the archaeological study includes information regarding the 13 sites identified and tested within the project and the off-site improvement area. The testing of these sites did not identify any temporally diagnostic prehistoric artifacts or features, but provided information that demonstrates that the property was most likely occupied first by the La Jolla Complex (Archaic Period), and again during the Late Prehistoric period by the Kumeyaay Indians. The historic site components represent use of the property during the late 1800s for homesteading and agricultural enterprises. The artifact collection from the cultural resource sites within the project comprises a limited representation of prehistoric use, and probably reflects the focus of most activity upon lithic metavolcanic resources common in the project area that attracted prehistoric people to this location.

Of the 13 sites that were tested and evaluated for significance based on CEQA criteria, County of San Diego significance guidelines and County of San Diego RPO criteria, three were evaluated as significant based on CEQA guidelines, (two prehistoric and one multi-component). The historic component of Site SDI-11,799/H was determined significant, while the prehistoric component was determined to be of limited significance. Nine sites were determined to be of limited significance according to San Diego County criteria, as they did yield information during the testing program but do not have the potential to provide further information. The remaining evaluated site (SDI-8074) has been determined to be not significant because no surface evidence of the site was relocated, and no artifacts were recovered after surface scrapes and 11 STP's. None of these resources were significant based on the County of San Diego's RPO criteria. The sites identified as significant historic resources based on CEQA and County guidelines represent both historic period and prehistoric resources within the project area. The responsibility for the proper treatment of these cultural resources is an important element of the environmental planning for the project.

The major goal of the mitigation program is the reduction of the potentially adverse impacts to the CEQA significant sites through a data recovery program. The data recovery program will reduce the impacts to these resources to a level less than significant. For each of the three CEQA significant sites (or portions thereof) that will be directly impacted, mitigation can be achieved through data recovery because the principal aspect of the significance of each of these specific sites is directly related to the research potential and information value represented in the cultural deposits. Successful mitigation of impacts is contingent upon the development and execution of a comprehensive data recovery program. This program will be based upon the following premise:

> *The significant sites that will be impacted have been identified as significant according to CEQA, which stipulates that their importance lies in the information potential represented in the individual cultural deposits.*

If the importance of a site is directly associated with the information potential it retains, then identifying the range and types of data available at the site and the regional archaeological objectives that can be furthered with the addition of data from the site will provide the foundation for achieving mitigation through data recovery. As will be demonstrated in subsequent sections, data recovery will mitigate direct impacts to the specific cultural resources identified as CEQA significant but not feasible to be preserved with the current project design.

In the following sections, specific mitigation measures will be discussed on an individual basis for all sites tested and identified as significant. Actual research issues and data needs are also discussed in Section 10.4, Research Design.

10.1 General Mitigation Recommendations

Two CEQA-significant cultural resources identified within Otay Business Park will be directly and completely impacted (SDI-11,799/H and SDI-17,963). An additional significant site, SDI-8081, is partially located in the off-site improvements area. The applicable significance criteria, site attributes, and proposed mitigation measures are listed for these sites in Table 10.0–1. The following list of mitigation recommendations includes all of the sites that were identified as significant and are considered to have additional potential to yield information important to the history or prehistory of the region.

(1) The following three CEQA-significant sites are located either entirely or partially within the limits of grading and brushing and will require mitigation measures. The specific measures are described for each site in Section 10.2.

SDI-17,963 SDI-11,799/H (Historic Component) SDI-8081

(2) For the three sites that will be subjected to data recovery, the laboratory analyses and special studies for these sites will be provided in the methodology discussion.

(3) Native American representatives will be contacted to participate in the mitigation program.

(4) Cultural materials recovered from the project shall be placed in permanent storage at the San Diego Archaeological Center or some other recognized curation facility that meets federal standards.

TABLE 10.0–1
Summary of Data Recovery Impact Mitigation Measures for Significant Sites

Site Designation	Applicable Significance Criteria	Size of Subsurface Deposit (m^2)	Proposed Test Units per Phase (m^2)			Total Square Meters (m2)	Proposed % of Subsurface to be Excavated
			Phase 1	Phase 2	Phase 3		
SDI-17,963	CEQA/County	2,952	88	60	Unlikely	148	5.0%
SDI-11,799/H	CEQA/County	1,046	31	21	Unlikely	52	5.0%
SDI-8081	CEQA/County	219	7	4	Unlikely	11	5.0%

Significance After Mitigation

The successful implementation of a mitigation plan that incorporates preservation or data recovery will achieve the goals of the mitigation program, and impacts to cultural resources will be reduced to a level below significance.

General Mitigation Procedures For Data Recovery

As noted previously, for those significant sites which cannot be feasibly preserved, and for which the applicant has committed support of a data recovery program to mitigate impacts, the success of the program is contingent upon extracting a sample which will exhaust the data potential of the site. The County of San Diego has not adopted a policy that identifies exactly the specific level of excavation required to achieve mitigation of impacts by data recovery. In most cases, the level of sampling is dictated by the information potential of the site. Data recovery is commonly discussed in terms of sampling percentages, referring to the percent of the area of the significant subsurface deposit that will be excavated. The general approach for achieving the mitigation of impacts through data recovery will begin with an indexing of the site. The site index will include a sufficient sample of the subsurface deposit, consisting of 3% of each deposit, to effectively stratify the deposits into areas of differing artifact content, densities, and activity areas. The indexing process will utilize a static grid to cover each site, with a sample unit placed in each grid cell. Utilizing a grid will produce a very structured, non-random, and uniform index of the content of each cultural deposit. Within the portion(s) of each site that retains the greatest research potential, an additional 2% of that area will be excavated. For most sites in the data recovery program, the area excavated will be up to 2% of the significant subsurface deposit (area of greater research potential). This volume of recovery will be sufficient to successfully pursue the research objectives of the research design, as well as to provide other researchers with a large information resource. At the sites considered to retain the greatest research potential, a third level of stratified sampling may be implemented to focus block excavations on areas that demonstrate intense artifact recovery, features, or multi-cultural depositional patterns.

The excavation of the subsurface deposits will be accomplished with standard one-meter-square test units excavated by hand in ten-centimeter levels. A more detailed description of the field methods to be used is provided in Section 10.5. All units will be screened, mapped, measured, and photographed through standard stratigraphic control measures.

For the phases of work at each site, the first phase will be the site indexing and the second phase will be the focused investigation. A third phase, if warranted, would be extremely focused on high potential elements of any significant site. Each phase has specific goals: the site index is a non-random representative sample of the entire site, while the second and third phases will be a focused, biased and intuitive study of the area within the deposit that has the greatest potential. The use of this type of data recovery has been successfully completed for the many projects in southern California, notably in the County of San Diego at the Rancho San Diego development (Byrd and Serr, 1993) and at the 4S Ranch project, where 26 regionally important sites were subjected to data recovery as mitigation for development-related impacts (Raven-Jennings *et al.* 1996).

For consistency, each site will be treated similarly, with an index phase followed by a focused, intuitive phase in the area of greatest importance. The phases of the sampling procedure to be used at the sites included in the data recovery program are:

> *Phase 1* The first phase of excavation at any particular site will typically involve a 3% sample used to index the site content and document intra-site variation. Test units will be uniformly distributed within each site using a grid system. For most sites, the presence of multiple rock outcroppings will constitute voids in the sample grid. These areas will be deleted from the calculations of site deposits when the data recovery programs are initiated; however, the areas represented by the outcrops cannot be calculated at this time.
>
> *Phase 2* The second phase of excavation will consist of up to 2% sample of each site area identified as representing the greatest research potential. The stratification of the site following the Phase 1 work will typically identify an area distinguished as retaining additional research potential. For this sampling phase, the test units would not be randomly placed, but would be intuitively located at the discretion of the archaeologist.
>
> *Phase 3* The last phase of excavation will be conducted at any sites that are found to contain particularly important deposits worthy of extended excavation. The sample size of any such area is dependent on the nature of the deposit and research potential.

The procedures noted above will be applied to each of the sites listed below. The actual number of square meters to be excavated in any particular site will depend upon the site size, importance, and research potential. The projected size of the sample for each of the sites listed below is not a minimum or maximum, but an estimate of the sample needed to satisfy the data needs of the research objectives. The possibility exists that previously unidentified subsurface deposits will be identified during data recovery, increasing the research potential of a significant site. In this case, the sample size of the Phase 1 or Phase 2 excavations may be readjusted. The field procedures are described in Section 10.5, including standard unit sizes and standard sifting screen size (1/8 inch mesh). At each site, a backhoe may be employed following the completed sampling program to search for any anomalies within the site. Trenches would be used to expose portions of the sites; however the number of trenches used in this type of investigation would be discussed and approved by the County before initiation.

10.2 Site-Specific Mitigation Measures

SDI-17,963

Site SDI-17,963 is a resource extraction and processing site located down-slope and just east of Site SDI-8077, along the west bank of an intermittent drainage within the central portion of the project area. The overall site dimensions, as identified by the surface distribution of artifacts, measure approximately 149 meters (489 feet) north to south by 59 meters (194 feet) east to west, covering 7,206 square meters (23,641 square feet). The subsurface deposit encompasses an area of approximately 2,952 square meters (9,685 square feet). For the mitigation program, the site will be directly impacted in its' entirety and data recovery will be utilized to mitigate impacts. The sampling program for the site will focus on a uniform indexing of the significant areas of the site. This first level of index sampling will consist of a 3% sample of the 2,952 square meter deposit. This represents a sample of 88 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 2% of the 2,952 square meters; the exact number of Phase 2 excavations will depend on the results of the Phase 1 excavations. The proposed data recovery excavations are summarized as follows:

- Size of Subsurface Deposit — 2,952 square meters
- Phase 1 — 3% sample of 88 test units
- Phase 2 — 2% sample of the overall area of increased research potential, resulting in the excavation of 60 test units. The total number of units excavated as Phase 2 will vary depending on the stratification of the subsurface deposit into areas of greater research potential.
- Total proposed sample size for data recovery — 148 square meters, representing approximately 5.0% of the areas of greatest research potential.
- A third phase of mitigation sampling is not likely at SDI-17,963, as this site is not considered a candidate for intense artifact deposits or substantial subsurface features.

SDI-11,799/H

This site is a multi-component rural homestead site characterized by a surface scatter of artifacts over an area measuring approximately 105 meters (344 feet) from north to south by 117 meters (383 feet) from east to west, covering 10,347 square meters (33,930 square feet). The site contains a focused subsurface deposit of approximately 1,046 square meters. For the mitigation program, the site will be directly impacted in its' entirety and data recovery will be utilized to mitigate impacts. The sampling program for the site will focus on a uniform indexing of the significant areas of the site. This first level of index sampling will consist of a 3.7% sample of the 1,046 square meter deposit. This represents a sample of 39 square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 1.2% of the 1,046 square meters; the exact number of Phase 2 excavations will depend on the results of the Phase 1 excavations. The proposed data recovery excavations are summarized as follows:

- Size of Subsurface Deposit — 1,046 square meters
- Phase 1 — 3% sample of 31 test units
- Phase 2 — 2% sample of the area of increased research potential resulting in the excavation of 21 test units. This total will vary depending on the stratification of the subsurface deposit into areas of greater research potential.
- Total proposed sample size for data recovery — 52 square meters, representing approximately 5.0% of the areas of greatest research potential.
- A third phase of mitigation sampling is not likely at SDI-11,799/H, as this site is not considered a candidate for intense historic artifact deposits associated with habitation of the area.

SDI-8081

Site SDI-8081 is a resource extraction and processing/seasonal habitation site located south of SDI-12,888H along the west edge of Alta Road, within the relatively level proposed off-site improvement area. Only portions of the site located along proposed off-site improvement roads were subjected to investigation. No bedrock outcrops or features were observed. The survey identified a moderately deep shell midden located along the southern edge of the proposed Siempre Viva Road. The shell midden was mapped along the southern edge of the proposed location of Siempre Viva Road approximately 168 meters (550 feet) west of Alta Mira Road, the location of which is illustrated in Figure 6.14–1. The shell midden measured approximately 219 square meters (2,362 square feet). For the mitigation program, only this portion of the site will be directly impacted and data recovery will be utilized to mitigate impacts. The sampling program for the site will focus on a uniform indexing of the significant areas of the site. This first level of index sampling will consist of a 3% sample of the shell midden deposit. This represents a sample of seven square meters for the Phase 1 index. The proposed Phase 2 excavations are projected based on an area of increased research potential estimated to be approximately 2% or four square meters; the exact number of Phase 2 excavations will depend on the results of the Phase 1 excavations. The proposed data recovery excavations are summarized as follows:

- Size of Subsurface Deposit — 219 square meters
- Phase 1 — 3% sample of 7 test units

- Phase 2 — 2% sample of the overall area of increased research potential, resulting in the excavation of 4 test units. The total number of units excavated during Phase 2 will vary depending on the stratification of the subsurface deposit into areas of greater research potential.
- Total proposed sample size for data recovery — 11 square meters, representing approximately 5.0% of the areas of greatest research potential.
- A third phase of mitigation sampling is not likely at SDI-8081, as this site is not considered a candidate for intense artifact deposits or substantial subsurface features.

10.3 Data Recovery Program

In accordance with CEQA (Section 15064.5) and the guidelines of the County of San Diego, the sites that have been evaluated as important which will be adversely impacted by the proposed project will require mitigation measures in the form of avoidance and/or data recovery programs to reduce the significance of potential impacts. In order to reduce impacts to a level below significant, data recovery programs will be necessary at those sites that are important and will be impacted, but cannot be preserved. All sites that will be included in data recovery programs are listed in Table 10.0–1. The data recovery programs must include adequate subsurface samples of the significant deposits. Special studies, including radiocarbon dating, faunal analysis, obsidian hydration and sourcing, and flake attribute analysis, shall be conducted to exhaust the research potential of the site areas to be impacted (see Section 10.5.2). The recovered materials should be treated according to standard archaeological procedures—each specimen should be washed (only if necessary for identification), cataloged, and analyzed, and a technical report of findings should be prepared in accordance with professional archaeological standards and guideline requirements.

10.4 Research Design

The data recovery program must comply with the regulations of the County of San Diego, and the results of this program should successfully exhaust the research potential of the site in order to reduce the impacts to a level below significant. The data recovery program will also follow the California OHP publication *Guidelines for Archaeological Research Design. Preservation Planning Bulletin No. 5*. (1991).

The design for the data recovery program for the Otay Business Park Project includes a consideration of the types of data that are potentially available, and applies this information to the current regional research questions pertaining to the cultures represented at the sites. The research questions posed, therefore, include those that can be more appropriately addressed during data recovery of significant sites to further these research issues.

This research design incorporates research questions based upon the current state of knowledge in anthropological theory and area-specific research concerns. For the purposes of this research design, the study area includes the western San Diego County region. As a prelude to archaeological data recovery, theoretical research hypotheses must be applied to the proposed data recovery program to ensure that the information recovered will address these important research concerns. The hypotheses contained herein are designed so that they may be tested against the archaeological data recovered from the sites.

The Otay Ranch Otay Business Park Project is located south of the Otay River Valley. Comparatively little is known about the prehistory of the Otay region of San Diego County – the development of the National City and Chula Vista areas prior to the establishment of CEQA laws resulted in the loss of a considerable amount of archaeological sites. By way of contrast, recent and rapid development of the area east of Chula Vista has resulted in the discovery of and recovery from numerous archaeological sites in that area. Recent work by Kyle *et al*. (1990), Pigniolo *et al*. (1990), McDonald *et al*. (1993), and Smith *et al*. (in prep) has identified several prehistoric habitation sites within the eastern Otay River watershed; occupants of these sites and others may have accessed the numerous quarry sites located within the Otay Business Park Project area.

The proposed research questions primarily consider, because of the presence of lithic resource extraction sites within the current project area, questions regarding the placement of these sites within the overall subsistence and settlement system of prehistoric populations inhabiting the Otay Mesa area. Other site types represented at Otay Business Park include temporary camps that were likely inhabited during hunting and quarrying forays in the area. Questions were developed for this research design to examine these site types as well. By designing fieldwork to address these subjects of inquiry, the results of the archaeological program will be made more meaningful to both theoretical and substantive research concerns.

10.4.1 Prehistoric Research Design

The mitigation and data recovery program for the Otay Business Park sites will focus on understanding the use of natural resources by the prehistoric occupants of Otay Business Park through time. The research design for the data recovery program was formulated using information from surrounding sites to determine the variety of characteristics manifested in the area, including site location in relation to water, vegetation, lithic resources, and elevations. The theoretical orientation and major research objectives for the Otay Business Park sites were based on an attempt to determine the vertical and horizontal variability within the site (i.e., do the individual sites being tested exhibit any differences in the kinds or relative quantities of artifacts or cultural ecofacts [shell, bone, etc.] within the vertical [temporal] or horizontal [spatial] planes?) and between sites. Vertical variation in the deposit might indicate either a shift in the subsistence strategy or in the kinds of subsistence materials available over a period of time. A shift in subsistence strategy over time might signify that different cultural groups were present at different times, or that one group adopted new lifestyles. Horizontal variations in the sample might indicate specialized activity areas or intra-site organization. Between sites, spatial patterning may indicate the use of different areas during different time periods, which suggests that certain sites were more suitable for certain activities.

The data recovery program was designed to retrieve the maximum amount of information from each site that could be applied to a wide variety of research topics concerning the region as a whole. Specifically, the research goals focused on gathering site-specific data to define intra-site organization, temporal placement, trade associations, and site function. Furthermore, the sites were analyzed in spatial context, to address the goals of environmental archaeology and define the relationship of the sites to the biophysical environment. Subsistence and settlement, chronology, technology, quarrying activities, and regional exchange and inter-group relations were the topics from which archaeological questions were formulated. These topics are presented below with individual research questions, although collectively they are designed to contribute to the overall understanding of how the prehistoric inhabitants of Otay Business Park utilized the natural resources of the area through time.

Site SDI-17,963 appears to have been used for a long period of time, intersite comparisons may shed light upon questions regarding the similarities or differences between Archaic La Jollan and Late Prehistoric Kumeyaay subsistence strategies.

Research Topics

Subsistence and Settlement Patterns

The degree to which the archaeological cultures represent alternate adaptations to inland resources has been an issue of much interest and debate in San Diego County (Laylander 1993). As is true elsewhere in California, an early hunting orientation was replaced by a more diversified, plant-oriented strategy during the Archaic Period, becoming ever more broad-based over time (Moratto 1984). The Late Prehistoric Period was characterized by even wider use of resources, with new strategies that focused on a few storable species, especially acorns (Chartkoff and Chartkoff 1984). This change may have been fueled, particularly in northern San Diego County, by the siltation of previously resource-rich lagoons circa 3500 YBP (Warren 1964). In the southern portion of the county, the formation of San Diego Bay encouraged the growth of an even more specialized marine orientation. A subsistence shift may have occurred when the coastal areas north of Mission Bay became less attractive, prompting a switch to inland strategies (Gallegos and Kyle 1988). If the Tijuana Lagoon also became silted, this may have pushed some groups into the Otay Business Park area, which is easily within a day’s walk from both San Diego Bay to the west, and the Sweetwater wetlands, to the north.

Researchers generally believe that the adaptation to the environment by Archaic La Jollan peoples in San Diego County initially emphasized hunting over gathering (in the guise of the now-subsumed San Dieguito Complex), and marine over terrestrial resources, and that this practice was "replaced" by the Late Prehistoric Kumeyaay subsistence pattern, where inland, terrestrial resources gained ascendancy. Generally, archaeologists agree that increased settlement densities and a terrestrial resource focus, particularly on the gathering and processing of acorns, are Late Prehistoric characteristics. The appearance of pottery, smaller projectile points, cremations, and the use of exotic lithic materials, especially Obsidian Butte obsidian, is evidence used to recognize this adaptive change (Gallegos 1992; Christenson 1992). The La Jollan site is often defined on the basis of what is lacking, such as pottery or small projectile points, but for certain types of artifacts, even if utilized, would not be expected to be present at these sites anyway.

However, recent evidence indicates that the La Jollan subsistence strategy was much more dependent on inland resources than previously thought (Raven-Jennings and Smith 1999; Buysse and Smith 2003). Therefore, contrasting inland Archaic and Late Prehistoric Kumeyaay sites presents much more of a challenge than comparing coastal La Jolla Complex and Late Prehistoric Kumeyaay sites. The inland expression of the La Jolla Complex (Warren et al. 1961) is characterized by a decrease quantity of marine mollusks, a greater variety of tools made of inland quarried stone in addition to cobbles, a broader range of resources used and resource zones exploited, increased milling, increased sedentism, and an emphasis on terrestrial hunting and gathering, all of which blur the distinctions between the La Jolla Complex and the later Late Prehistoric Kumeyaay lifeways (Moriarty 1966; Gallegos 1991; Kaldenberg 1982; True 1958; Warren et al. 1961; Meighan 1954; and Forstadt et al. 1992). As a result, many archaeologists propose continuity between the inland La Jolla Complex and the Late Prehistoric Kumeyaay, stressing the overall similarity of the tool kits and the general extension of Archaic lifeways into the Late Prehistoric Period (Warren 1964, 1968; True 1966,1970; True et al. 1974; Byrd and Serr 1993; Cardenas 1986).

Various researchers (True and Waugh 1982; Byrd and Serr 1993) have found it useful to employ Binford's (1980) distinction between foragers and collectors to contrast local Archaic and Late Prehistoric patterns. The difference between foraging and collecting strategies is a matter of relative mobility and the spatial relationship between consumers and resources, both of which have implications for the resulting archaeological record. The Archaic La Jollan Complex is associated with the foraging strategy, where residential camps are placed near desired resources and occupied for short periods of time. This focus on very local resource procurement and consumption results in quite small, resource-specific locations and tool kits. The Late Prehistoric Kumeyaay pattern is characterized as a collector strategy, where habitation sites were of a seasonal nature, and thus are larger and display more diversity in tools. Logistical forays are staged from these areas to seek out a wide variety of resources beyond the camp boundary, which result in the appearance of many ancillary resource procurement locations. At the large sedentary camps, faunal resources in particular appear to be very diverse, with various animal classes represented. Waugh (1986), while noting this correlation, stated that it is uncertain if this diversity was due to more inhabitants in a small area, or whether the sedentism itself was a response to the depletion or absence of larger animals.

The transition between a forager and a collector strategy was not abrupt, however, and sites from the Late Archaic Period (3000 to 1300 YBP) represent the gradual transformation of Archaic lifeways into a collector mode. Although the change appears at different times throughout California, the Late Archaic is characterized by increased hunting and an emphasis on acorns (Chartkoff and Chartkoff 1984). In the Santa Barbara area, the shift to a broader resource base began around 5000 to 3000 YBP, reached up to 50 miles inland, and was labeled the Campbell Tradition (Harrison and Harrison 1966). The Campbell Tradition represents a more diversified economy that was focused on acorn processing, mollusk gathering, terrestrial hunting of rabbits, deer, and waterfowl, and the beginnings of a specialized maritime economy. The technological hallmarks of this tradition include stone bowls, mortars and pestles, hopper mortars, projectile points, drill-like implements, flake scrapers, large knives, and ornaments made of shell, bone, and stone (Koerper et al. 1986). The latter part of the Campbell Tradition is termed Middle Period in the Santa Barbara area (King 1981), where increasing complexity is posited on the basis of multiplying varieties of beads and ornaments, in addition to the technological developments listed above. The Campbell Tradition was initially characterized as an intrusion of Alaskan peoples (Harrison and Harrison 1966); however, more recent studies all point to a gradual, *in situ*, development of the Chumash people over the course of 7,000 years (Moratto 1984).

Wallace (1955) also separates this time period from preceding patterns for southern California as Horizon III of his Intermediate Cultures (3000 to approximately 2000/1000 YBP). He notes that mortars and pestles become more common, perhaps signaling the initial use of acorns, along with basket-hopper mortars. Additionally during this time period, projectile points become smaller and there are increasing quantities of *Olivella* beads, bone awls, and steatite artifacts, as exemplified by the Campbell Tradition. Similarly, Moriarty (1966) places a major change during this time period, calling it Diegueño I (pre-ceramic Yuman), and attributes the change in subsistence and settlement to the amalgamation of desert peoples with the resident La Jolla Complex people circa 3000 to 2000 YBP. Other researchers, while not giving this period a specific name, have noted an increasingly broad resource base and a proliferation of inland occupation sites at this time period (Norwood 1980; Forstadt 1992; Cardenas 1986).

In San Diego County, the Campbell Tradition has previously been considered only weakly represented due to the lack of evidence for marine mammal hunting (Warren 1968) and the lack of evidence for the utilization of inland environments (Warren 1964). However, recent investigations from Otay Business Park (Smith et al. 2004), Scripps Poway Parkway (Raven-

Jennings and Smith 1999), Rancho San Diego (Byrd and Serr 1993), and Sites SDI-4,648 and W-348 (Cardenas and Van Wormer 1984), offer increasing evidence of relatively intense use of inland San Diego County by the end of the Middle Archaic (3000 YBP). Byrd and Serr (1993), in fact, question whether the Archaic exploitation of inland environments was not already well established prior to 3000 YBP but note the lack of evidence.

In addition, the hiatus or decline in the occupation of coastal sites during the Late Archaic and early Late Prehistoric, which caused consternation due to the lack of radiocarbon dates between approximately 2000 and 600 YBP, appears to be in the process of being filled in by the discovery of inland occupation sites in northern and southern San Diego County. Several reasons have been put forward to explain what seems to be the lack of coastal occupation during this time period. Given the known decimation of coastal resources during this same period, an exodus from the larger coastal villages to locations inland, may have occurred. However, rather than utterly disappear, the La Jolla complex resurfaces inland at this same time period and is transformed by a tool kit meant for a different environment which has subsequently, been identified as Pauma complex. As inland San Diego County continues to be developed, it is likely that the idea that site location shifted towards the inland to exploit more abundant, terrestrial resources will be accepted. Alternatively, the lack of radiocarbon dates from this time period may be explained by error factors in the radiocarbon method or it may be indicative of bias in the selection of radiocarbon samples (Laylander 1993).

In short, a mixed hunting/gathering strategy prevailed over most time periods in San Diego County, yet there are enough cumulative differences to make the effort to discriminate between Archaic and Late Prehistoric sites and site components, in order to isolate and characterize subsistence and settlement strategies over time, a worthy task. The lithic resource extraction and tool manufacturing site, SDI-17,963, may provide an ideal opportunity to look at the changing use of the same location over a long span of time.

Chronology

Chronology is the foundation of most archaeological research; in the current case, where contrasts between time periods are sought, it is imperative to maximize the number of solidly dated associations. Culture-sensitive materials include pottery and projectile points, while relative and absolute dating techniques can be employed on obsidian, shell, charcoal, and soil samples. Detailed investigations at sites in the Otay Mesa area containing significant subsurface deposits are severely lacking. One reason for this is that until recently, development and associated archaeological investigations in the Otay region have been relatively limited. Also, many of the identified sites in the area, particularly on the east side of Otay Mesa, are limited-use lithic extraction sites or artifact scatters; these sites were often repeatedly utilized over many years, but determining the dates of their use is often impossible due to a lack of subsurface deposition or datable material. In addition, farming activity has been extensive throughout the area for the past 100 years, further contributing to the dispersal and erosion of deposits.

Based on earlier work, most sites in Otay Mesa fall either into the Early Archaic Period (7600 to 3500 YBP), when the Tijuana Lagoon was open, or in the later portion of the Late Prehistoric Period (560 to 260 YBP). Dates on coastal Site SDI-4281 included 3840 ± 60 YBP and 4340 ± 50 YBP, although these dates were conducted on marine shell; a single piece of Tizon Brown Ware suggests a later component might also be present (Bingham 1976). Bingham suggested that Site SDI-4281 served as a primary camp or village due to the fact that the midden deposit was at least 70 centimeters deeper than at nearby Site SDI-222, although the radiocarbon dates suggest occupation may have been of longer duration at Site SDI-222 (7260 ± 80 to 3640 ± 60 YBP) (Bingham 1976). Again, these dates were on shell samples. Similarly, at the largely Archaic Keubler Ranch site, where radiocarbon dates on shell indicate the site was occupied between 6430 ± 140 and 7620 ± 100 YBP, an additional single ceramic sherd was recovered (Kyle et al. 1990). Site SDI-10,185, located at the head of Spring Canyon was radiocarbon dated to 3568 ± 80 YBP (Robbins-Wade 1990). The sample used for the date was a marine shell fragment, which may have resulted in a date slightly older than the actual utilization of the site. Although no shell was recovered and no midden soil observed, it is possible subsurface deposits at SDI-17,963 contain carbon-datable material or temporally diagnostic artifacts. Comparison of the results from these sites to those located in Otay Business Park might shed some light on the utilization of inland southern San Diego County, particularly at the transition from the Archaic to the Late Prehistoric.

<u>Research Questions</u>:

- When did the Late Prehistoric Kumeyaay and Archaic La Jollan occupations of Otay Business Park sites occur? How spatially separate are they?
- Is there a hiatus within the Archaic or between the La Jollan and Kumeyaay habitations of inland sites, as has been documented in coastal areas between 2000 and 600 YBP, or is there continued use of the area during this period?
- Do the assemblages at Otay Business Park provide data in support of continuity or change in tool kits and subsistence activities?
- Some researchers maintain that radiocarbon dates taken from shell and soil are not comparable. Do paired shell/soil samples at Otay Business Park agree or disagree as to the date range of these sites?
- Are the previously accepted culturally diagnostic artifact types (marine shell, groundstone tools, Coso obsidian, and cobble-based tools for La Jolla Complex; ceramics, small projectile points, Obsidian Butte obsidian, and bedrock milling for Late Prehistoric) accurate cultural markers for these sites?

<u>Technology</u>

The relative lack of temporally diagnostic artifacts at sites in San Diego County limits the analytic value of even a large sample of sites unless a model can be proposed that allows at least some sites to be dated based on the groupings of non-diagnostic artifacts for a particular time period. To expand the interpretive value of the non-diagnostic artifacts recovered, characteristic tools kits of the Late Prehistoric Kumeyaay and Archaic La Jollans should be identified in datable contexts. If diagnostic tool kits could be identified, these could be used to assist in the interpretation of the cultural affiliation of other sites that lack temporally diagnostic tools or absolute dates.

Cobble and domed scrapers, scraper planes, and cobble tools in general (Kowta 1969; Kaldenberg 1982), along with associated cortical debitage (Rosen 1989), marine shell, and heavier tools are thought to be associated with the La Jolla Complex. Quarried materials, lighter flake tools, a high frequency of medium processing tools such as perforators, drills, and flake scrapers (Cardenas and Van Wormer 1984) and an increased use of fine-grained materials such as quartz, chalcedony, and jasper are typical of the Late Prehistoric Kumeyaay (Gallegos 1992).

Groundstone tools are believed by some archaeologists to be temporally sensitive. Portable metates appear to be associated with Archaic sites (Byrd and Serr 1993), while mortars and pestles are considered hallmarks of the Late Prehistoric Kumeyaay (Carrico and Taylor 1983; Byrd and Serr 1993). Bedrock milling stations are considered by some to be diagnostic of Late Prehistoric use (Forstadt et al. 1992; Byrd and Serr 1993), although some believe that they may be also be found at Late Archaic sites as well (Westec Services 1981). Byrd and Serr (1993) found evidence of bedrock milling at an Archaic site and at several Late Prehistoric sites, suggesting that perhaps the presence of milling features as a diagnostic temporal trait remains undefined.

Tool function is another key issue in the understanding of cultural change, since La Jollan and Late Prehistoric Kumeyaay tools are relatively simple and redundant in terms of lithic materials and functional types represented. For example, without residue analysis, it is not known whether a mano represents a plant- or animal-processing tool. Therefore, the possibility exists that the same tools were put to different uses over time. The ethnographic literature associates groundstone tools not only with plant processing but with the grinding of small animals (Michelson 1967; Luomala 1978), which has been supported by blood residue analysis of metates (Carbone 1984, Yohe et al. 1991) and manos (Byrd and Serr 1993), wherein rabbit blood was identified on both types of tools.

Without empirical evidence, it is difficult to ascertain the function of even those tools that have a more obvious use; as Carrico and Kyle (1987) pointed out, the presence of knives may indicate not only hunting, but any activities which included scraping and cutting, such as in the processing of wood, shell, and hide. Byrd and Serr's (1993) residue analysis was a case in point: hammerstones showed residues from rabbit and deer, one Desert Side-Notched projectile point contained pronghorn blood and another had trout (or salmon) blood, and an Elko projectile point included rabbit blood residue. This inquiry is further confounded by the fact that assemblage-oriented analysis to determine cultural discriminations is often derailed by seasonal or special activity tool kits (Binford 1980).

What is needed, in short, is more information about both the function and the temporal associations of tools in order to arrive at a clearer understanding of Archaic and Late Prehistoric activities. Tool-rich sites with long occupational histories provide ideal opportunities to perform this task. Of particular interest is the functional characterization of the many "multi-purpose" tools found at Otay Business Park. The strategy utilized in the field, therefore, centered on maximizing the recovery of tools and associated soil samples so that ample analytical studies could be employed. Residue studies performed on a wide range of tools aided in the classification of tool function.

<u>Research Questions</u>:

- Is the presence of a tool kit, which includes scrapers, scraper planes, and cobble and domed scrapers, that comprises a significant portion of the total tool recovery (i.e. > 20%), indicative of Archaic use?
- What types of artifacts were made with fine-grained metavolcanic materials? Was there variation in the use of ultra fine-grained materials, both local and non-local, from the Archaic to the Late Prehistoric?
- Considering the close proximity to a lithic quarry, were bifaces and debitage from Archaic contexts reflective of earlier stages of reduction, or are they finished tools?
- Were milling functions different between Archaic and Late Prehistoric sites? What resources were ground or pounded in mortars and on portable metates? Did these differ through time?
- What were the functions of the different tool categories? Did these functions change over time? Were different resources processed with different lithic tools?
- Can assemblages and/or certain tool categories be used to indicate subsistence activities in the absence of faunal remains?

<u>Research Questions for Potential Data Recovery</u>:

- Can specialized studies, including use-wear studies, residue analysis, and reduction stage classification, provide additional clues regarding the range of activities conducted at the site?
- How do these sites fit into the overall settlement and subsistence systems of prehistoric populations in the area? How does the utilization of the Otay Business Park sites compare to other sites in the region both spatially and temporally?

10.4.2 Historic Research Design

Research issues for the rural historic site study at the Otay Business Park Project include agricultural economics, family economics, status, gender, and power. The question of agricultural economics encompasses both marketing and the suitability of upland sites in a semi-arid climate to sustain a small farming operation. Family economics focuses on the motivations and success rate of individual farmsteaders in turn-of-the-century San Diego County. Questions of status, gender, and power are implicit in the material culture represented in the archaeological collections, but are explicit in data collected through historic research.

The nature of this project, coupled with BFSA research on neighboring communities, has provided the advantages of a community study approach (Cusick 1995). This approach provides for a broad view of local history while overcoming the limitations and potential pitfalls of drawing conclusions about the community from a single site perspective. Using the local community as a study focus, individual families are viewed within that context using multiple sources of data.

<u>Agricultural Economics</u>

The success of a small farm in the semi-arid climate of southern California is largely dependent on the availability of water and how the farmer uses that scarce commodity (Gordinier 1966). The study area falls into a Mediterranean climate classification because the average annual rainfall is 12 to 16 inches, focused in the winter months (Beauchamp 1986). The normally low rainfall was exacerbated as a limiting factor in the Otay Mesa homestead community because of an extended and severe drought during the first two decades of the 20th century (SDAC ND).

The carrying capacity of a particular farm without artificial irrigation is measured in the number of grazing animals, or the type of planted crop and number of crops per year. In the Otay Mesa area, eucalyptus, palm, olive, and pepper trees were well suited for the area based on soil type and rainfall pattern (1925 and 1935 Census of Agriculture; SDAC ND). In addition, wheat, barley, corn, peaches, apricots, grapes, potatoes, beans, and peas were farmed on Otay Mesa (SDAC ND). Barley hay had a high demand locally for feeding working animals and other livestock. Lima beans became a successful crop in the early twentieth century because they flourished in the Otay Mesa area with artificial irrigation, and a ready market existed for economic staples such as beans. While it is true that many of the small farmsteads practiced artificial irrigation in order to sustain a family garden plot, poultry, and a cow or other family source of meat and milk, these enterprises were limited in size and designed for home consumption. The statistical success rate of grazing livestock was largely dependent on the availability of a large free range, a situation not found on the average 160-acre farmstead.

In the late nineteenth century, farmsteads on the coastal mesas and in the foothills required skilled coordination of seasonal rainfall for agriculture, and judicious use of water wells and cisterns for household supply in order to be successful (Gordinier 1966). Selection of the most prudent agricultural product would not guarantee success because the annual rainfall varied greatly in both quantity and distribution throughout the wet season. The dry season could be devastating to the unprepared small farmer. A combination of no rainfall and soaring summer temperatures were at times brutal for both planted crops and livestock.

Research Question:

- To what extent did the average farmstead family succeed in the area of agricultural economics?

The farmstead families of Otay Mesa may not have been adequately prepared, in terms of farming experience and agricultural practices of the period, to maximize land use without overgrazing or depleting the soil (Scarbery and Scarbery ND). Identifying farming techniques and crop choices made by the small farmers could be key indicators in understanding successful planning to achieve, without exceeding, carrying capacity. This research orientation is closely associated with the next research question, which looks at how the farmstead endeavor affected the financial health of each family.

Family Economics

The motivating factors of each family entering into a land patent program likely included a desire for self-sufficiency, to exercise the pioneering spirit, or to live a rural lifestyle, but the most obvious motivation for families embarking on the land patent experience was the opportunity to acquire a parcel of land with little or nothing in the way of initial investment (Robinson 1948; Gates 1962). In western San Diego County in the late 1880s and early 1890s, the only remaining unclaimed land was situated on the upland portions of the coastal mesas and foothills. All the most desirable parcels in the watered valleys not held as Spanish or Mexican land grants had been settled by earlier immigrants.

Agricultural market price fluctuations were difficult for the average small farmer to predict with any degree of reliability. Population booms and recessions within City of San Diego during the latter 19th century and early 20th century affected the demand and pricing of crops. The strategy of minimum investment of time and money for a maximum economic return at market was often a gamble on the part of the small farmer. The more cautious farmer could opt to produce crops such as grain and hay whose prices were historically stable but significantly lower than a labor intensive, high risk crop such as citrus or poultry. The success of the latter was dependent on adequate water and a volatile market. Seasonal surpluses and shortages, locally and overseas, caused fluctuations in market prices. A surplus of one or more agricultural products might have meant the loss of an entire year's work for producers of that commodity.

Adaptive strategies were also required to cope with the vagaries of rainfall. Prolonged droughts or heat waves were devastating to crops and livestock. A lack of adequate rainfall over a period of years could and did change the economic complexion of farmsteading.

Research Question:

- What were the financial expectations and outcomes of the farmstead/homestead experience for each individual or family treated in this study?

Focusing on durable agricultural products such as beans or barley hay, for which a reliable market existed, might not bring the high prices of products with a short storage life or whose markets were more volatile, but the conservative approach might carry the wise family to at least marginal economic farming success. Even with conservative agricultural practices, dry farming 160 acres did not consistently produce adequate income to sustain a family. Considerations of economic success through sound agricultural practices would likely not have interested the land speculator or the farmsteader with a steady job or a business in one of the nearby population centers. At each of the farmstead sites studied, different motivations are suggested by the archival research and varying archaeological recovery.

Being a successful farmsteader may not have included success as a dry farmer, but may simply have meant acquiring a parcel of land with minimal financial investment. If this was the case, each family would have needed a source of income independent of the farmstead. While archival research would seem to be a better barometer for independent financial means, archaeological deposits attendant to the farmstead could indicate a comfortable lifestyle by the presence of quantities and qualities of household goods beyond those anticipated from economically depressed farmers. How long the farm was occupied may also be an indicator of financial goal and degree of success. A farmstead held just long enough to achieve a land patent would suggest the land alone—not farming—was the economic goal.

Status

Indications of status, both within the local community and the greater sphere of American society, are implicit in the archaeological record. More importantly, indications of status are explicit in archival records. Status is the rank, position, or standing of a person or group of persons, such as a family, within social and economic spheres. This could be analyzed at the household, community, or any larger level of society. For example, holding a local position such as a local school board member was not equivalent to being a judge or a state senator. Wealth was another form of status that few, if any, of the small farmers enjoyed.

Research Question:

- What are the indicators of status among family members at the farmstead sites and in the archival material?

Status in the sphere of social interaction is often suggested by material things such as the quality of ceramics in a collection (Klein 1991; Schmitt and Zeier 1993). A host who is particularly accomplished at giving parties or organizing other social events might be accorded special status because of that skill. The archaeological record might reflect this behavior in a larger quantity and better quality of ceramics and glassware. Economic status among a peer group might be suggested by possessions such as finer china, glassware, or other household furnishings. In the case of farmsteaders, a larger barn has been offered as a symbol of status (Friedlander 1991). Status based on physical possessions, then, could be identifiable in the archaeological record, while status based on social or professional skill might be more easily identified through archival research.

Gender and Family Composition

The status of men was quite different than that of women in turn-of-the-century America. During this time, women were traditionally expected to assume a subordinate role in public life. Men controlled the vote, ran the businesses, and held positions of social and political importance. Business and employment opportunities for women were largely limited to such fields as nursing, waiting tables, and teaching. Women were expected to marry and raise families, while men were expected to earn the family living. Men traditionally held positions of authority and were the political decision-makers.

Indications of gender are explicit in both the archival and archaeological records and constitute a subset of status (Clements 1993). The archival records offer clear identification of gender because of the use of individual names. In the archaeological record, gender is clearly indicated by personal care product packaging. Cold cream jars, perfume, hair tonic, and aftershave lotion are gender-specific products. Shoe care products can be identified with gender when, for example, a white shoe dressing bottle is present and archival research identifies a female in the household worked as a nurse or waitress.

The archaeological sample from each homestead could clearly indicate the presence of a family, a couple without children, or a single person. The variety, gender, and age association of specific specimens are the clues upon which such conclusions are based. The anthropological concept of a “men’s camp” may have been present at one of the farmstead sites where the archaeological recovery failed to indicate the presence of women or children. This may have been the result of a bachelor owner, tenant at the site, or a bunkhouse for male workers.

Research Question:

- What are the indicators of gender among family members at the sites in the archaeological recovery and the archival material?

Society in turn-of-the-century San Diego County had available an increasing variety of personal hygiene products. Packaging technology during this period was developing product-specific (brand recognition) designs to increase consumer appeal. While this factor resulted in a bonanza for the historic sites archaeologist, this was not the only area of gender identification in the historic record.

The division of labor that existed made it unlikely that women would shop for farm machinery, although she might be expected to place an order for her husband. By the same token, men would seldom engage in shopping for sewing needs, unless it was to buy a new sewing machine as a gift. In the case of gender, household trash would be expected to provide as much gender-specific information as the archival record. Aftershave and shaving cream mugs were male symbols while cold cream jars and perfume bottles were female symbols. These items were not found in abundance in the rural environment, as social requirements for dress and personal adornment were quite different in cities than they were in rural settings (Henry 1991). This factor is important to remember when working in rural settings because men's and women's toiletries would likely not occur as frequently nor in as great a variety as in urban settings of the same period and economic level.

10.5 Methodology

A plan for a program to carry out the necessary data recovery procedures is presented below. The program is consistent with the policies and guidelines of the County of San Diego and with the California OHP publication *Guidelines for Archaeological Research Design. Preservation Planning Bulletin No. 5*. (1991). In order to mitigate potential impacts to the sites in accordance with CEQA, and also to retrieve the data needed to comply with County guidelines, a sample of the site areas to be impacted (i.e., the limits of impacts) will be required. The governing parameters to be used to determine the level of the sampling will be the redundancy of the recovered artifacts and the research potential of the site.

10.5.1 Field Methods

The data recovery program will focus upon the excavation of test units measuring one meter square to a minimum depth of 30 centimeters or until bedrock is encountered. If cultural materials are present beyond this depth, the excavation shall continue until one sterile level is exposed. The units will be excavated in controlled, ten-centimeter levels. All removed soils will be sifted through 1/8-inch mesh hardware cloth. All artifacts recovered during the screening process shall be properly labeled with provenience information in the field, and subsequently subjected to standard laboratory procedures of washing (if appropriate) and cataloging. The excavation of the units will be documented with field notes, illustrations, and photographs.

At the conclusion of the test unit excavations, backhoe trenches may be excavated to investigate the site(s) further and search for any unusual features or artifact concentrations. When a backhoe is used, the methodology to be followed shall include:

- All trenches must be excavated under the supervision of the project archaeologist.
- All trenches must be mapped, measured, photographed, and sketched.
- Periodic screening of the excavated material from the trenches will be conducted.
- Provenience data for all screened soil shall be recorded.

Based on data from the backhoe trenches, the data recovery program could be expanded to focus upon features or unique deposits that differ from the materials already studied.

Any features that are discovered during the archaeological excavations shall be exposed through careful hand-excavation. Additional test units may be needed to fully expose the features, which will then be recorded by sketching and photography. Any datable materials found in association with discovered features shall be collected for radiocarbon dating. If obvious datable samples cannot be found at the sites in the data recovery program, then several bulk soil samples may be collected and processed in an attempt to date the deposits.

At each site, column samples will be taken to permit microanalysis of midden contents. The columns will measure ten centimeters square, and will conform to the walls of selected completed test units to the bottom of the deposit. All of the soil from the column will be collected, and not screened in the field. The samples will be returned to the laboratory for analysis. In addition, during hand excavation, special attention will be given to the identification of lithic tools found in situ and their potential for residue analysis. When possible, such tools will be bagged separately, thereby excluded them from the wet-screening process. A sample of the surrounding soil will be collected to serve as a control sample, should the artifact be chosen for pollen, phytolith, and blood residue analyses.

Throughout the field operations, standard archaeological procedures will be implemented. All test units and features will be mapped utilizing a Trimble GeoXT Global Positioning.

10.5.2 Prehistoric Laboratory Analysis

All of the materials recovered from the field excavations will be subjected to standard laboratory analysis. Artifacts may be washed, if necessary, to permit proper identification. The artifacts will be sorted and cataloged, including counts, materials, condition, weight, provenience, and unique artifact identification numbers.

The lithic artifacts recovered from the project will be subjected to analysis that will include recordation of critical measurements and weight, and inspection for evidence of use-wear, retouch, patination, or stains. The recovered flakes (or a representative sample) will be subjected to an analysis of attributes such as size, condition, type, termination, and material. The attribute analysis will include the flake collections recovered during the testing program.

Non-lithic materials, such as ecofacts (shell and bone), shall be subjected to specialized analyses. The shell will be cataloged by species and weight of recovery per level. The bone material will be weighed and subsequently submitted for specialized faunal analysis. The laboratory analysis of the column samples may include flotation procedures to remove seeds and other microfaunal remains from the soil, followed by the screening of the remainder through a 1/16-inch mesh sieve, if the potential for non-lithic materials is noted in the deposit.

Other specialized studies that will be conducted if the appropriate materials are encountered during the data recovery program will include marine shell species identification, faunal analysis, otolith analysis (for seasonality), oxygen isotopic analysis (also for seasonality), radiocarbon dating, obsidian sourcing and hydration, and blood residue and phytolith studies. These specialized studies are briefly described below:

(a) Shell Analysis

The recovery of shell is possible at sites within the project, although no shell was observed during the testing program. Analysis of the shell recovery would include the speciation of all shell fragments collected. The shell will be recorded by weight, and will include a count of hinges to determine the minimum number of individuals represented by the recovery.

(b) Faunal Analysis

Prehistoric food bone was not documented at the sites within Otay Business Park; however, further excavations may uncover bone material within temporary camps. Any bone material recovered during the data recovery program should be analyzed by a faunal expert to identify species, types, age, and evidence of burning or butchering. The prehistoric bone recovery will provide information concerning diet, activity areas within the sites, the habitats exploited, and methods of processing.

(c) Radiocarbon Dating

This dating technique will be attempted whenever possible. The investigations conducted thus far did not recover any dateable material, although bulk soil dating was not attempted to see if the deposits contained sufficient carbon for dating. The radiocarbon dating will be useful in conjunction with the stratigraphic recovery of cultural materials to establish the chronology of the sites. Therefore, the collection of samples for dating should be based on the presence of diagnostic artifacts, features, or geological strata delineations. In conjunction with the research topics, any possible opportunities to delineate parts of sites into Late Prehistoric and Archaic periods will be advanced through the use of dating methods.

(d) Blood Residue Studies

Organic residue on lithic artifacts may be useful in the determination of the species of animals represented by the residue. However, the use of blood residue studies is necessarily dependent upon the identification of such residues on artifacts. The detection of blood residue must be made prior to any washing of artifacts, or the residue samples will be lost.

(e) Isotopic Profiles

The analysis of Oxygen-18 isotopic profiles from shells may be used to determine the season during which the shells were collected. This process measures the ratio of isotopes of oxygen, which is determined by water temperature. A minimum of five shells shall be used in this analysis, particularly if no other means of determining seasonality can be utilized. Use of his type of analysis is not likely due to the paucity of shell.

(f) Obsidian Hydration and Sourcing

Any recovered obsidian artifacts will be submitted to a specialist to determine the source of the lithic material. The obsidian shall also be analyzed to produce hydration readings, which may then be used to provide relative dates for the use of the artifacts.

10.5.3 Historic Laboratory Analysis

The entire collection will be subjected to laboratory sorting and analysis. However, in order to ensure that the analysis produces the level of data needed to address research topics but remain within the existing budget, the laboratory analysis will incorporate a target goal of conducting more detailed analysis upon a portion of the collection, and a more generalized analysis on the balance of the collection. The portion that would be subjected to more detailed analysis will be determined by selecting the portions of features that represented the richest deposits, in terms of artifact count and artifact diversity, and appeared to retain the most integrity. The material from a feature or portions of features with little or no contextual integrity, which were often those remains evaluated in the field as not significant, will be subjected to the a more generalized analysis. These contexts, consisting of disturbed or shallow deposits, will be subjected to a general sorting and analysis technique in order to identify the general character of the deposit with a minimum amount of investment. The two different sorting and analysis techniques employed are discussed in detail below.

General Artifact Sorting and Analysis

In order to characterize the content of the remaining portions of features that would be general sorted, a checklist was developed that would allow a cursory sort of each level to result in a concise description of its contents. The checklist included primary artifact types, such as bone, shell, glass, ceramics, miscellaneous metal, nails, a section for evidence of burning, and a comments section that could be utilized to note anything unique about the level. Quantities of each artifact type will be counted and the dominant artifact type present will be noted. One checklist will be completed for every general sort unit level or collection. This results in a general description of the recovery from each general sort level, including contents of the level, the dominant artifact type present, information about whether the material was burned, and relative quantities of the major artifact types. Completion of the checklist for the units selected for detailed analysis is deemed unnecessary as all elements of these levels will be cataloged.

In addition to the checklists, the general sort units will be examined for diagnostic artifacts that might contribute to the research topics. Artifacts that are selected will include bottles with embossing or any other characteristic that might facilitate dating or identification, ceramics with patterns or hallmarks, all jewelry, children's toys, samples of nails, tin can tops, buttons and clasps, or any other artifact that might in any way further the research effort of this investigation. All artifacts sorted out during the general sort procedure are identified, cataloged, and added to the artifact database (Appendix II). Photographs of select artifacts will be provided.

Detailed Artifact Sorting and Analysis

The detailed sorting technique includes the sorting, identification, and cataloging of all material for specific portions of the feature. The sorting process is conducted at the BFSA laboratory. All remaining artifacts will be separated by class and type, and identified to the most specific level possible. All faunal material from detail-sorted deposits are separated and analyzed. All material selected for detailed analysis are cataloged and included in the artifact database. Photographs of select artifacts will be provided.

Artifact Categories

Artifacts are prepared for cataloging according to standard laboratory practices. Items that are covered in dirt to the point of obscuring relevant characteristics will be dry brushed or wiped with a damp cloth in order to enhance the artifact description. Each catalog entry is bagged in a two-millimeter thick, archival quality bag labeled with location and catalog number information. Information recorded about cataloged artifacts include provenience and depth, material, quantity and/or weight, functional category, artifact type, and a brief description of the artifact(s) that includes any diagnostic information about manufacturing methods, brand or product marks, and manufacturers' marks. Artifacts sharing the same provenience, material, and color characteristics, but that were fragmentary, are assigned a single catalog number. Artifacts have been classified by functional category for purpose of analysis. These functional categories include:

Domestic Expendable – This category includes all generally shared household goods and their containers that would have to be replaced on a fairly regular basis, mostly consisting of grocery-type food items. Artifact classes and types considered part of this category include canned goods such as food/cooking, beverage, and miscellaneous including paint, cleaner, and oil cans; glassed goods such as food/cooking, beverage (non-alcoholic), liquor/spirits, condiment, medicine, and miscellaneous including laundry and ink bottles; and the various caps, lids, closures, and access parts that would accompany such containers. Although butchered bone remains would technically be considered domestic expendable items, for analyses purposes, they are included under ecofacts and separated out from non-butchered bone.

Domestic Non-Expendable – This category includes all items that are used by the household as a whole, such as for food service and preparation, but are not exhaustible like grocery items. Artifact classes and types that are placed in this category include ceramic tableware, hotelware, and crockery/food storage, glassware, tableware and bakeware, canning jars and equipment, flatware, metal cookware and tableware, and kitchen appliance parts and tools.

Domestic General – The domestic general category includes items that are mainly related to the structure itself and its furnishings, and the non-food related activities of the inhabitants. Artifact classes and types considered part of this category include electrical systems and fixtures, plumbing systems and fixtures, furnishings such as furniture, lamps, washing fixtures, and telephone items; decorative items; pet supplies and equipment; and miscellaneous items such as stationary supplies, sewing supplies, and storage shelves and hooks.

Construction/Maintenance – This category consists of both home improvement and maintenance tool kits, and construction site tools and materials. Artifact classes and types in this category include tools; fasteners such as nails, staples, bolts, etc.; hardware fixtures such as hinges and knobs; building materials such as brick, lumber, and window glass.

Personal – The personal category is comprised of items that would be associated with the individual rather than the household, and therefore not generally shared. Artifact classes and types include grooming and hygiene products; cosmetic/beauty products; clothing items; personal adornment items such as jewelry and hairpins; and personal possessions such as coins, eyeglasses, house keys, pocket tools, purses, smoking-related items, and portable musical instruments.

Ecofact – This category includes natural items that cannot be definitely identified as a food item, as well as butchered animal bone. Although there may not be any apparent characteristics indicating that the ecofact is a cultural remain, it is possible that many of these items are indeed food remains. Artifact classes and types in this category include animal bone, both with and without butcher marks; shell; charcoal; and plant or other natural material. The inclusion of butchered animal bone in this category was done in order to make quantitative comparisons between *artifact* groups less complicated, since bone is generally compared based on weight and not counts.

10.6 Curation

The prehistoric cultural materials recovered from Otay Business Park shall be permanently curated at a San Diego facility that meets federal standards per 36 CFR Part 79, such as the San Diego Archaeological Center. Artifacts would be professionally curated and made available to other archaeologists/researchers for further study. All diagnostic historic artifacts will be curated along with any artifacts possessing educational or interpretive potential and artifacts expressing symbolic or heritage values to recognized ethnic descendents or social groups. Only artifacts from sites that have been determined to be not significant pursuant to CEQA may be sampled. A sample may be taken only in the event that nondescript bulk items such as glass or metal are recovered that do not contain long-term research value, and are in such great quantity that a sample will suffice. Any proposed sampling program must be approved by the County of San Diego.

10.7 Native American Consultation

Local Native American representatives shall be contacted and included as part of the mitigation program. Native American monitoring shall be required during the archaeological excavations. As part of the data recovery mitigation program, a pre-excavation agreement may be made with the local Kumeyaay Native American tribes. This agreement will describe the procedures to be invoked in the event any human remains are encountered or items of sacred or religious significance are discovered.

10.7.1 Provisions for the Discovery of Human Remains

The possibility exists that human remains may be discovered during the data recovery programs, although no human bone material was identified during the testing program. In the event that human burials are encountered, standard procedures for such discoveries will be implemented, including notification of the San Diego County Coroner’s Office, the County of San Diego, and the Native American Heritage Commission in Sacramento, and local Native American representatives. Fieldwork will be discontinued in the area of any such discovery.

The Native American representative and the County of San Diego will be consulted to determine a preferred course of action, and the burial will be treated accordingly.

11.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this archaeological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief, and have been compiled in accordance with the California Environmental Quality Act (CEQA) criteria as defined in Section 15064.5 and the County of San Diego cultural resource criteria.

September 15, 2006, revised July 22, 2009

Brian F. Smith
Principal Investigator

Date

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